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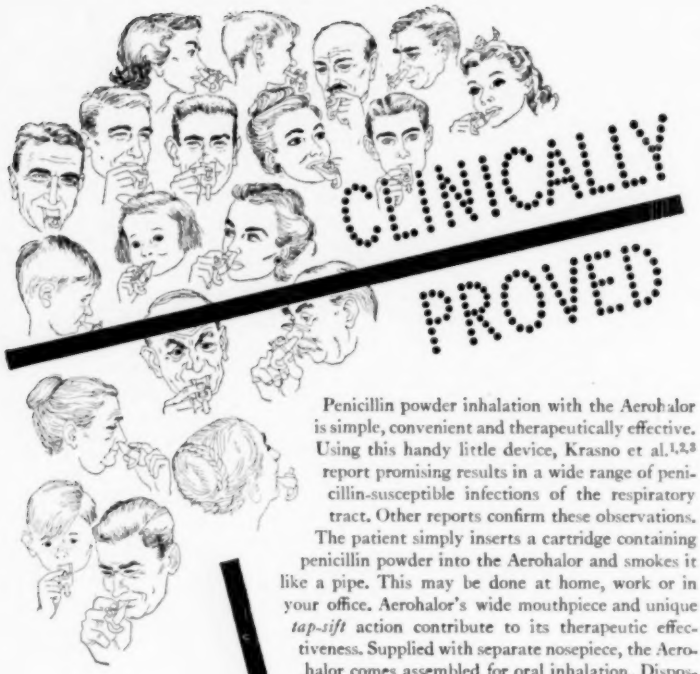

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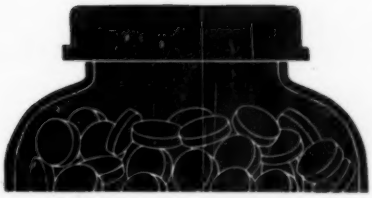

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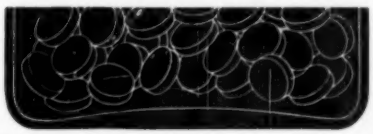

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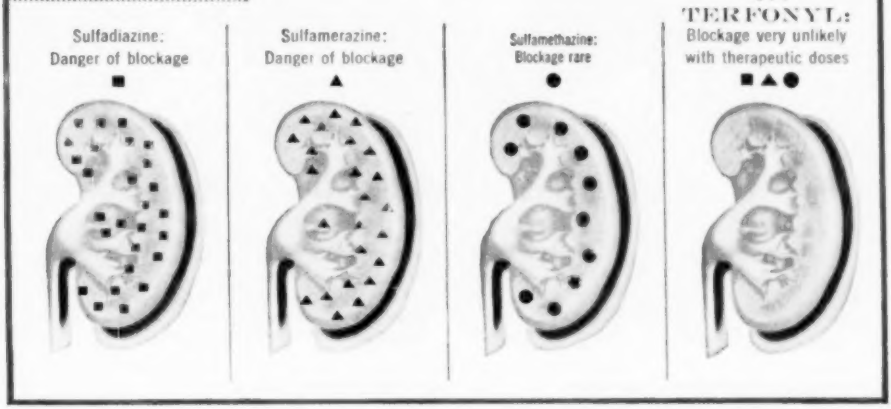

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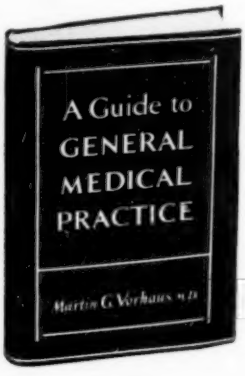
by Martin G. Vorhaus, M.D., Attending Psysician, Hospital for Joint Diseases, New York City.



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Osler's Influence*

WILBURT C. DAVISON
Dean and Professor of Pediatrics, Duke University School of Medicine
Durham, North Carolina

Perhaps the reason for my being here, to quote one of the members of the McGill medical faculty, is that in my talk at the Osler Society two years ago, I spoke of Sir William as a human being and "dedeified" him.[1] If that is the reason, I am very happy. Osler was the most human of human beings I have ever known. If I learned anything from him, it was that he loathed adulation; that he would like to be de leified; that he loved to dedeify others and that he did not take them or himself seriously.[2] If he had known the word "debunk," I am sure he would have used it. However, it was not coined until eight years after his death, so "dedeify" must be used. Sir William particularly liked to dedeify anyone who was inclined to be pompous and a stuffed shirt, and especially those who gushingly talked to him with a starry eyed gaze of adulation. I remember one woman who fondly, and in syrupy accents, asked him if he preferred to be called Sir William or just plain Dr. Osler. He firmly, but kindly, deflated her by paraphrasing the bellman in *The Hunting of The Snark:* "I answer to hi or to any loud cry." There is the story he told to shock an adoring patient to the effect that his mother had once placed him in a field with a bull calf and a bucket of buttermilk. The Bishop of Oxford was one of those who started pompously and was punctured by a humorous, but Rabelaisian, remark. One of his students, who had placed Osler on a lofty pedestal, was brought to earth by a very earthy story about "fertilizing a field with flatus." On the surface, some of these Oslerian dedeifying remarks seemed rude, but, actually, like the Virginian, they carried no sting as they were delivered with the famous Oslerian smile. This attitude of his to refuse to take most people or situations seriously was a splendid lesson in medical education. We cannot follow his pattern as cleverly as he did, but being able to laugh or smile ourselves out of arguments has avoided some of the faculty rows that plague most institutions.

In preparing this article, I did what I have seen Sir William do in a similar situation, namely, read everything he could find on the subject and make notes on scraps of paper and on the backs of envelopes whenever an idea occurred to

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him. I have often wondered whether he rewrote these fragments or pasted them together. I pasted mine, and cannot smooth these bits together into beautiful prose as he did. During the past three months, I again looked over his two biographies, reread many of the 440 writings about Osler, assiduously assembled in 1926 by Maude E. Abbott [1] who yields to no one in love of Sir William, and have studied the 80 tributes which have recently appeared in the Osler Numbers of the *Canadian Medical Association Journal*, the *Archives of Internal Medicine*, the *Bulletin of the Johns Hopkins Hospital*, the *British Medical Journal*, the *North Carolina Medical Journal*, and other publications (see bibliography). I have used practically all of these sources, but in order not to heckle the text with too many reference numbers, they were used only for those authors whose articles were too flagrantly pirated. My humble thanks, however, are due to all of those who have written about Sir William.

In one way I am sorry that I have read all these articles, because my own reminiscences of the three years I spent with Sir William as a student [7] are now being submerged among the impressions of others, and I fear that I cannot translate them as vividly real and personal to my students and house staff, as I have tried to do during the past thirty years. However, I learned three distinct lessons from this reading.

First, our generation cannot write about Osler without going into rhapsodies about him. All, except three of the tributors I have read, told what Osler meant to them and not what his influence has been and is on medicine. All the others, assumed that everyone knew what Sir William had done. In footnote [b] I have listed 261 adulatory praising phrases from "abundant learning" to "zest for work," which I have compiled from reading about Osler. It is true, there may be some repetition among these 261 eulogies, but, after all, in the 700,000 words in the English language, only twenty-seven synonyms for perfection could be found in Webster's Dictionary or in Roget's Thesaurus. These tributes are understatements to me and to those who knew him even for a brief moment. All of us could see all of these qualities, as well as more. For those unfortunates who did not know him, this fulsome praise must cloy. And Osler would not have liked it either. Compliments embarrassed him. No wonder that the members of this generation feel that Sir William has been deified and that "there ain't any such thing," to quote the farmer who saw a giraffe for the first time. They sniff at our panegyrics and skeptically regard our adulation as that of a child for Santa Claus.

All of Osler's devotees, like Cushing in the dedication of his magnificent *Life of Osler*, have expressed the hope that something of Osler's influence might be conveyed to those of a generation that has not known him,[6] but as far as I know it has been done only at McGill. At other medical schools in this country, and in England and Scotland, probably because of this deification and sense of unreality, the name, Osler, carries little of that spirit which we revere, but merely a vague recollection of a famous physician of the 19th Century. The situation is better at the Hopkins, Oxford and Duke, but when I spoke on Osler at one school, the students' faces were blank; their memory

of Osler was as indefinite as that which modern students have of Hippocrates and Galen. I was in the office of a prominent physician and saw a photograph of Sir William on the wall. In reply to my enquiry, he said he did not know where it came from or even who it was, and that his predecessor had left it there. He was only mildly interested when I told him it was Osler. Apparently, the book publishers realize this sad state of affairs and have omitted Osler's name from the cover of his *Principles and Practice*. That was the crowning blow to those of us who have loved him.

Fortunately, the tradition at McGill is different. The students receive Osler's *Way of Life* in their second year, and Cushing's *Life of Sir William Osler* is an honored senior prize. But, perhaps, more than anything, the Osler Society fosters this spirit which we need. For example, last year I met a young physician who told me of a clinic he had established in the mountains of North Carolina with no resources except his own enthusiasm. I was so interested that I drove two hundred miles to see it and him. He and the local people had converted an abandoned school house into as fine a twelve-bed hospital and clinic as anyone could wish. I asked him why he had done it instead of settling in a city like the other graduates of his generation. He replied that he had been graduated from McGill, had been a member of the Osler Society, and that he felt that Osler would have wanted him to do what he was doing. I wish that all students could feel that idealism, and to see that they get some of it, as well as to increase their interest in rural general practice, Duke seniors are offered a fortnight with this practical idealist. All of them are enthusiastic over this opportunity. We must emulate McGill in spreading the Osler spirit.

Second, I learned that our generation will brook no criticism of Sir William. In all the articles which I read, only three mentioned the slightest deviation from human perfection. Three days after their publication, one of his admirers wrote me the following note: "I am very unhappy over one of the articles that was an adverse criticism of W.O. in parts—the Editors should not have published it on such an occasion."

I felt the same way when I read the articles. It was sacrilegeous and blasphemous even to think of an imperfection. It was like criticizing the deity. The members of our generation frankly and unashamedly are hero worshippers, so far as Osler is concerned, and unlike the younger generation do not like dedeifying. However, if we want these youngsters to be true believers like us, and to feel Osler's spirit, it behooves us not only to tell them that Osler was great but more important to show them what he did and why he was great. And if he had some human frailty, so much the better—it would make him seem more real to modern students. Therefore, the more I thought about these criticisms, the happier I felt. One of them consisted in the suggestion that Osler resented being wrong on a diagnosis. As a matter of fact, he did not like it all, as I found out while an intern on the Chief's service. A badly burned child died in convulsions which Sir William and everyone else had believed were due to the toxemia of the burns. However, the autopsy revealed meningococcus meningitis, and I was dared to tell the

Chief. I innocently did and he very crossly said that he had suspected it. Maybe he did. His annoyance endeared him to the house staff more than ever. It made him appear more like the rest of us. No one could blame him. After all, Sir William had had very little experience in being wrong, while with us it was a daily occurrence.

The other breath of criticism in these articles was that Osler left the Hopkins for what at that time was regarded as a sinecure at Oxford because he did not believe that he could keep up with the rapid invasion of experimental methods with all of their complexities into the art of medicine. In other words, he felt that the days of observation and description were being supplanted by experimentation. That I do not believe. As a matter of fact, no one was keener than Osler about this new experimental approach to medicine, as was shown by his insistence at Oxford on the appointments of Sir Charles S Sherrington and Dr. Georges Dreyer who were foremost experimentalists. He also encouraged students to do experimental work. For example, at his suggestion, Penfield started his experimental neurology and neurosurgery with Sherrington, and I spent a year doing research with Dreyer and A. Duncan Gardner who is now Osler's successor as the Regius Professor of Medicine at Oxford.

Anyone could interpret either as a criticism or as proof of Sir William's avid love of books, the sly comment by Sherrington[27] that there is at McGill a small sixteenth century herbal full of woodcuts which he, Sherrington, certainly thought a possession of his own, but Osler "borrowed" it.°

Third, the most disappointing lesson of all which I obtained from this reading was that many of Osler's admirers apparently felt that his fame was due to what he was rather than to what he had done. Herrick stated that the influence of Sir William Osler was as great as, perhaps even greater than, that of any other medical man in the English speaking world in the last one hundred years.[13] Sir Humphrey D. Rolleston went further, saying that at the time of his death, Osler was the greatest personality in the medical world.[23] Shattuck wrote that "there was no medical man of my time, and there have been few in any other time, who has exerted so widespread and so sweetly wholesome an influence.[26] Usually these articles were without any specific details of accomplishment, and they always ended with paeans of praise about his personality. I really believe that most of us were so blinded by his personality that we could not grasp what he had done. As an example of his effect on young men, a friend of mine told me that when her husband, a physician, returned from a visit to Osler at Oxford, his face shone like that of Moses as he brought the ten commandments down from the mount after talking with the Lord. No wonder that the younger generation needs tangible evidence of Osler's greatness instead of eulogies.

I realize that it is presumptuous for me or any one to attempt to interpret Osler and to describe the basis for his influence. I feel with Rufus Cole that a frank analysis of Osler's qualities seems a sacrilege to those of us who loved and honored him and were ever ready to obey him. It is like performing an

autopsy on a dear friend.[5] However, strange though it may seem, I have had some experience in defending him. To us who knew him, Sir William needs no defense, but when I returned to the Hopkins from World War I, all aglow from spending a week's leave at 13 Norham Gardens, I became an assistant to John Howland, who did for pediatrics what Osler did for all of medicine. Unfortunately, Howland never had the opportunity of knowing Osler and of imbibing his spirit. Furthermore, as a pioneer in the full time, white coated, laboratory field, he had a little antipathy, jealousy and scorn, conscious or unconscious, for the frock coated bedside physicians of the preceding generation.[6] Worst of all, he loved to argue, and whenever he could find anything on which his juniors felt deeply or cherished ideals, he would make provocative statements. As the Duchess sang to her child in Alice in Wonderland:

"He only did it to annoy
Because he knew it teases."

He soon found that I would rise and writhe whenever he would say that Osler's reputation was due to his personality, and not to what he had done. It was irreverent even to think that, but as I knew that Howland had little use for anyone who would not stand up for his beliefs, I marshalled the tangible evidence of Osler's greatness, and it was considerable. Could anyone have done more than he did in one lifetime? Everyone agrees that Sir William was a master clinician, a superb teacher, a scintillating writer, erudite bibliophile, historian and scholar, classical humanist, practical philosopher, and delightful friend and companion for young and old, but as John Howland irritatingly used to say, "what did he do to merit all this?" The presentation of the evidence for Osler's greatness is very easy. Jokingly he once said that his medical education had been gold plated on a brown stone foundation. That may be, but his influence, however, like wisdom in the Book of Proverbs, rests on at least seven very firm pillars.

FIRST AS A PHYSICIAN: Osler's ambition "to make of myself a good clinical physician" was amply realized, and needs but little discussion. Even the younger generation has heard of his diagnostic ability. To Osler, the physician's calling was sacrosanct and his devotion to it matched that conception,[27] and yet there are those who think of him only as a humanist!

As a diagnostician he was supreme, but there are murmurs that as a therapist he was a nihilist. He was, but only because there were so few reliable drugs known at that time. Just as he debunked many medical theories in his textbook, he rationalized the use of drugs. He believed only in facts, and pharmacologically speaking, they were few. We forget that 54 per cent of the drugs in use today were unknown ten years ago. Osler was on the alert for proven new drugs, like emetine hydrochloride in 1912. His comments on intestinal antiseptics in typhoid are classic. Though he used very little medication, he cured many chronic illnesses by his stimulating and encouraging influence. He was a pioneer in psychosomatic medicine. His favorite prescription was time in divided doses, hope and nux vomica,[17] but he would

have been only too delighted to have practiced in our times with the sulfas, antibiotics and antihistaminics, ACTH and other wonder drugs. However, we badly need his therapeutic conservatism and diagnostic acumen today. In most clinics, sulfatherapy, penicillin, streptomycin, aureomycin and chloromycetin are tried before clinical and laboratory efforts, chiefly laboratory, are made toward a diagnosis. We have just had an extensive measles epidemic along with an outbreak of Rocky Mountain spotted fever in which the rash is sometimes similar. Does the house staff first do an Oslerian differential diagnosis? No. They give all of these patients chloromycetin on the theory that it will cure Rocky Mountain spotted fever, and the measles patients will recover anyway, so why waste time differentiating them?

SECOND AS A TEACHER: Osler made it possible for students to learn clinical medicine at the bedside, instead of having it spoonfed to them in lectures. He rarely gave lectures, and those only under protest. His teaching was at the bedside and the autopsy table, and was more of an informal learning together than didactic instruction. He combined the best of British and German medical education. He stimulated his students and colleagues to search at the bedside, in the laboratory, the morgue and the library for the truths of medicine, both old and new, and to appreciate the meaning of culture, scholarship and character. He made students think. His influence as a teacher, so graphically told by Christian [4] and Longcope,[18] not only stimulated his own students but is carried on now to the third generation of students. Christian's and Longcope's students are now professors of medicine who are conveying to their students—perhaps unconsciously—the Oslerian precepts learned by Christian and Longcope. In one of his addresses, Sir William said, "I desire no other epitaph than the statement that I taught medical students in the wards, as I regard this as by far the most useful and important work I have been called upon to do." Osler, however, did not invent bedside teaching. At McGill, which was modeled on Edinburgh, bedside teaching was started in 1845.[15] Over two hundred years before, Franciscus Sylvius had taught students beside his twelve beds in the hospital at Leyden, and he and his successors made that university a mecca for medical students from all over Europe.[5] Sir William did, however, introduce bedside teaching into the United States, and never before his time had the students become a part of the ward organization or had taken so active a share in the study of disease.[5] In spite of the obvious benefits of bedside and laboratory teaching, some schools from ignorance, obstinacy or penury still cling to lectures.

Osler also started the present pyramidal clinical residency program.[5] No one knows whether this was a conscious imitation of Welch's training plan in pathology or of the German Privat Docent or whether, and this is the most likely, it grew up like Topsy because men like Lafleur of McGill and Thayer of Harvard became so enamored of Osler and his teaching that they just remained at the Hopkins indefinitely, and Osler had to organize the system to provide younger men with a similar opportunity for training beyond an internship. Although Osler was always recommending his assistants for

positions throughout the world, they hated to leave him. I was once offered a position in China, and Welch told me that Osler would have advised me to take it as he did not believe that youngsters should stay at the Hopkins for indefinite periods. Osler's own transition from a basic scientist to a clinician has set the pattern for the present training of specialists,[22] but it was intended only for the exceptional man. For years, the Hopkins was the only hospital which had residencies. Osler foresaw the dangers of specialism,* but no one could have prophesied that now, due to the specialty boards and the G.I. Bill of Rights, every graduate would want and usually get a residency, and that there would be 17,293 of them in all specialties throughout the continent. Consequently, there is a dearth of general practitioners. Sir William was a staunch advocate of general practice as the backbone of medicine, so he might feel that his residency program was not an unmixed blessing.

THIRD AS A SCIENTIST: Osler introduced scientific laboratory methods into the art of medicine. It is one of the pillars of his influence which frequently is unrecognized by the members of this laboratory frenzied generation who remember him only as a bedside physician, if they recall him at all. However, he really was the original pioneer in using laboratory methods as aids to diagnosis. Furthermore, his post-graduate training was primarily laboratory and not clinical. After graduation in 1872, he spent fifteen months in the physiology laboratories of University College, London, working in physiology and histology under Sir John Burdon-Sanderson, whom he was to succeed in 1904 as Regius Professor of Medicine at Oxford. In 1873, he investigated blood platelets with an associate who later became Sir E. Sharpey Schafer, and published: "On the Action of Certain Reagents—Atropia, Physostigma and Curare —on the Colorless Blood-Corpuscles." In 1875, he introduced instruction in the use of microscopes into McGill, started the teaching of pathology there the following year, and opened a physiology laboratory in 1879 so that: "senior students have now the opportunity of studying practically the essentials in the chemistry of digestion, the secretions and the urine."[15] In fact, Osler's influence at McGill was chiefly through the laboratory and autopsy room. In Philadelphia, where his clinical career really started, he also had a leavening influence on the laboratory side. He and John H. Husser each contributed fifty dollars to equip a clinical laboratory at the University Hospital and to furnish its first microscope.[21] He had one of the first blood counting apparatuses in Philadelphia.[16] At the Hopkins, one of his first labors was to introduce clinical microscopy, thereby bringing the laboratory to the bedside. All of his medical life he was keen on the laboratory examination of sputum, stools, urine and blood. He wrote many papers on blood, parasites and comparative pathology. These clinical microscopy laboratories and studies may have been primitive by our standards, but they were the height of science in his day. Furthermore, he did these studies himself and did not employ a technician to do the work and interpret the results. Many of the so-called erudite physicians of today would be lost without their auxiliary biochemists, biophysicists and hematologists. At Oxford, in spite of his skill in physical

diagnosis, Osler was one of the leaders in advocating the use of roentgenograms.

Early in this century, the spirit of investigation and research was in the air, and it is little realized how much Osler did to fan the flame and to lay the foundation for the present advances in medicine. At all of the schools at which he taught, as previously mentioned, he constantly stimulated his students and colleagues to undertake research problems. No one could have been more enthusiastic over my own small studies of typhoid and paratyphoid immunity or more helpful in obtaining a vivisection certificate for me from the British Home Office. His powers of observation and description provided the solid basis on which our present research and experimentation are built. These advances were made possible by his own work as an investigator and a teacher, and their consummation was greatly hastened by the improvements in the organization of clinics which he introduced at Baltimore.[5] He felt the time to be ripe for the introduction of new methods into the study of disease, but realized that these methods required men of different training than had been his; that observation and description were not enough. His recognition of the need for experimentalists at Oxford and his insistence on Sherrington's and Dreyer's appointments have previously been mentioned.

Alan Gregg wrote that there are three main causes for the advances in medicine: (a) predisposing, which set the stage, (b) precipitating, which bring on the actors and start the play, and (c) perpetuating, which keep the show going.[11] The most important predisposing cause of our modern medicine was Osler's approach to a medical problem, which he instilled into his students and colleagues by precept and example. His attitude toward medicine completely fits the following description of the scientific view of life which Gregg states is the predisposing cause for our advances in medicine: "It is curious, observant and rational. It examines and experiments. It distrusts glib and plausible explanations. It collects and sifts evidence, seeking proof and relying on reasoning from observed events. It questions authoritative pronouncements, be they ever so authoritative."[11] This attitude of Osler set the stage for the advances made by the young men Osler trained and their successors.

FOURTH AS A MEDICAL REFORMER: Osler also had an important influence as one of Gregg's perpetuating causes of the advances in medicine—namely through medical education.[11] No one did more than he to transform medical schools from diploma mills to institutions in which students learned to face their limitations and to seek to remove them by the Oslerian approach to medical problems, mentioned above. In addition to raising the standards of medical education he helped elevate medical practice. He was a pioneer in advocating boards of medical licensure. He was an organizer of many medical societies: the Association of American Physicians, which, he said, marked the coming of age of American medicine; the American Pediatric Society, and many forget that he and Abraham Jacobi were the pioneer American pediatricians; the Association of American Medical Colleges;[31] the Medical Library Association, and the Association of Physicians of Great Britain and Ireland, to

mention just a few. He recognized a physician's obligation to medical societies and discharged it with pleasure.

He also was a pioneer in public health and social service, starting in 1882 with an investigation of parasitic infestation in Montreal hogs. Later, he was active in campaigns to reduce the incidence of tuberculosis, miner's phthisis, typhoid, pneumonia and venereal disease.[24] In Baltimore, by having two seniors, Blanch M. Epler and Adelaide Dutcher, investigate the home conditions and environment of his tuberculous patients, he created the social service movement which later was expanded by Richard C. Cabot. At Oxford (while I was a student, he personally paid most of the expenses of the nurse who carried out his home care program for tuberculosis.

FIFTH AS A MEDICAL WRITER. Osler's powers of accurate observation and concise description have never been equalled. For example, a recent review of lupus erythematosus stated that "nothing new had been added to Osler's fundamental expressions."[30] The length of his bibliography—more than 1,500 items—starting with his "*Christmas and the Microscope*" in 1869 —may have embarrassed him, for in giving Wilder Penfield and me collections of his reprints when we left Oxford in 1916, he said that one of the regrets of his life was that he had written so much.[7] His descriptions of the so-called Osler diseases[1]—I never heard him refer to them as Osler diseases—as well as of abdominal tumors, cerebral palsies, chorea, cretinism, goiter, malaria, nephritis, pneumonia, syphilis, tuberculosis and typhoid, to mention only a few of his contributions, form the foundations of our clinical medicine which, after all, is based on observation and description rather than on theory or experiment. Sir Humphrey D. Rolleston stated that "any writer, especially with a new idea, observation or historical subject, would be well advised to find out before publication what Osler may have said upon the subject."[25] Not only were his observations accurate, but his lucid and exquisite prose converted a scientific treatise into literature. His epigrams, aphorisms and Oslerisms are classics.[2] How better than by his words, can we know him? Furthermore, once he had described a syndrome, he continued a zealous interest in it, as I know from my numerous blood counts on his polycythemia patients, whose portraits Lady Osler gave to the Hopkins. We need more observation and description today with virus pneumonia, periodic and Q fever and other recently recognized entities. Without more Oslerian observation and description, medical progress will be delayed.

His textbook, "*The Principles and Practice of Medicine,*" placed medicine for the first time on a firm clinical foundation. It was Osler's medical masterpiece, a carefully edited compendium of the essentials of medicine. Bewildering and unproved theories were omitted; useless, or possibly harmful, therapy was condemned; unnecessary verbiage was deleted.[18] The book is now in its sixteenth edition and has passed through eighty-four printings. As Carr has demonstrated in the introduction to the sixteenth edition, the successive editions have reflected the progress and history of medicine from 1892, when Osler for the first time clarified the subject.[3] It is a tragedy that his name

has been omitted from the cover of this latest edition. Although Fulton believes that "the writing of a highly successful textbook is a doubtful distinction,"[9] the late President Harper of the University of Chicago said that the contribution of one who sought for the new was of no greater value than that of the competent teacher or the writer of a genuinely good textbook, who made known and interpreted the old.[12] The textbook also provided the means for the splendid Osler Library at McGill.

SIXTH AS A HUMANIST: From his student days onward, Osler was a student of the history of medicine, and he became an ardent collector of old medical books and of the literary productions of physicians of all ages. He infected others with his enthusiasm in this field, and he exerted a great influence in improving and enlarging medical libraries on this continent, and in promoting the cultural accomplishments of American physicians. So much has been written about him in this role, especially by those who were associated with him almost entirely in this connection, that Cole feared that in future years he might be remembered only as a bibliophile, and that people would forget that he was a physician.[5] Indeed, Fulton believes that Osler's fame should rest on his humanism rather than on his medicine.[9] However, book collecting, medical history, biography and philosophy are only some, but not the main, facets of his influence. Gilbert G. A. Murray well described this broader view: "Osler was not only one of the most eminent physicians in the world, but he represented in a peculiar way the learned physician who was one of the marked characters of the seventeenth and eighteenth centuries and stood for a type of culture which the Classical Association does not wish to see die out of the world."[20] Sir William, as Charles J. Singer commented, was more interested in the authors than in their books. The books were only the medium for Osler's study of man in which his primary interest lay.[28] So skillfully did he weave into his discussions the importance of medical history, and so entertaining and interesting did he make it, that many of his students continued an active interest in the subject through life.[4]

SEVENTH AS A PERSONALITY: Last, but not least, was Osler's personal influence. Those who knew him at first hand, and this included all who knew him even briefly, so warm was the glow of his presence, were a devoted, almost an apostolic band.[2] If their zeal was at times overlavish, as indicated in the footnote of praising phrases,[b] their motivation was honest. Though Osler, unlike Atlas, never stooped to shoulder the world, he always kept his arms around it.[10] He exuded familiarity tempered with reserve. He could take the arm of the most exalted without arousing resentment but no one took his arm or slapped him on the back. He did what "comes naturally" but when we do it, it is only a poor and obvious imitation. He followed the golden rule, and his creed was to like and sympathize with everyone. He never gave a thought to the length of his own shadow.[22] If he could not see good in people, he saw nothing. In any gathering, he seemed able to address each guest intimately—Tom, Jack, Jim or whatever familiarity dictated.[27] Osler's wonderful power made every young man he met feel that he was in the presence

of one who was taking a personal interest in him. It was a true and natural expression of the overflowing humanity that was part of him. Universal sympathy was the essence of his greatness, a greatness of personality, that characteristic power to perceive and elicit the best in any companion, like a jockey who instinctively gets the best out of a horse.

One of the greatest tributes to this master clinician is the affectionate pride of so many that their lives were in some way associated with him. So great was his example and so influential his personality that these men and women will always have a fellow feeling of possessiveness of something rich and fine that they wish they could pass on to others.[29] Knowing him was a password to friendship with others who knew him. As soon as one learned that the other had been under Osler's influence it was "Pass Friend." For example, an elderly Japanese physician, who sat next to me at a dinner in Kyoto this spring, started the conversation by saying that he had been taught by Dr. Osler at Pennsylvania in the late eighties. I replied that I had been at Oxford with him, and from thence forward American-Japanese associations were smooth.[g] Indeed, Osler through his disciples in every country did much to improve international relations, especially in medicine.

Osler's "God-given quality of holding friendships with unforgetting tenacity"[6] was based not only on the love that developed spontaneously in everyone who met him, but it also was fostered by the feeling that Sir William was constantly and continuously interested in each of us and was always trying to help us. His brief but clever notes whenever he saw an article by one of us or when he heard that some honor had been attained were treasured by the recipient. An example is the one to Lord Horder on his knighthood: "I am glad it has come whilst the sun is on your face."[14] He could see some promise in all of us and pushed the best in us. For example, I was interested in research in infectious diseases and would periodically receive one of the famous "brief notes" which counteracted any tendency to flag. Osler's short notes on private mailing cards[h] could be well imitated. We could put all we wanted to convey in two sentences as he did, sign it and the recipient probably would feel as we did that this handwritten brief note was much more personal than our dictated and typed letters. We usually get garrulous when dictating as it is so easy and it helps fill the page. Besides, these cards would save secretaries and be a great economy in a medical school or office. Whenever one of my students writes an article, has a baby, or gets a promotion, I imitate Osler by writing him or her a brief note. They may not cherish my notes as I did Sir William's, but I get the benefit of thinking that is what he would have done, and that I am keeping his example and precepts alive.

Many of Osler's precepts had practical value in the art of living a happier medical life. Every medical student should read his addresses and essays, e.g. The Way of Life, Aequanimitas, The Alabama Student, Science and Immortality, The Old Humanities and The New Science, etc. He followed his own advice of "Don't trust your memory—write notes." My use of a pocket notebook or Robinson Reminder stems from seeing his notes on en-

velopes or bits of paper. "Punctuality is the prime essential of a physician. If invariably on time he will succeed even in the face of professional mediocrity" is another of his valuable aids. His habit of reading medical journals in automobiles or trains and at odd times so that he could keep up with the constant stream instilled into me and others the habit of regular reading. I can see the value of it even more after my return from Japan. The accumulated stack of journals looked hopeless and I can readily understand why so many physicians in active practice get discouraged if they once allow the crop to get ahead of them. "How did Osler find time to do all that he did?" is a frequent question. The answer is easy for those of us who watched him closely, and it required close watching for he did it so unostentatiously. He worked constantly!

Lastly, it is impossible to overrate what Lady Osler did to stimulate "the great physician;" to help him to make the right decisions; to provide him with the necessary recreation at home, and to entertain their numerous friends while leaving him free for his work. She fired him to greater efforts whenever his own ambition and spirits were flagging. She was an excellent and witty letter writer with an enviable memory for names,[8] and a stately hostess of unruffled geniality who listened indulgently.[27] All who knew her loved her. Her only fault, in which all of his relatives were equally guilty, was in calling Sir William, "Willie." It was lèse majesté! My elder son is named William but as in Eugene Field's poem, "the fellers call him Bill."

SUMMARY: That Osler's influence merited remembrance is indicated by Esther Rosencrantz' list of buildings, lectureships, societies, clubs, libraries, medals, plaques, tablets, cairns, hospital wards and even a Pullman car and a Liberty ship, which have been named in his memory.[25] At no time is Osler's influence more needed than at present. Imagine what he could have done with the badly tangled public relations of the medical profession. He could have smoothed out the situation and enlisted public support for the good there is in us and avoided our present position in which the public and government suspect us of being wholly evil. No one has taken Osler's place, and we must demonstrate to this present generation not only what he was and meant to us, but what he did for them and for medicine and can continue to do if the medical youth will try to emulate him as we attempted to do. He embodied, applied and transmitted all that is finest and best in a physician.[10]

(a) Typical of Sir William's philosophy of not taking himself or others seriously was his comforting remark to a worried intern: "Whatever is bothering you, don't let it. You have sense enough to know what a fool you are."

(b) *Osler's Qualities*: abundant learning, accessibility, accuracy and conciseness of description, agelessness, allowed no waste of his time, always kind, approachable, arresting style, astounding observer, aversion to publicity and reporters, blithe, brief note habit, broad culture, broad cultural activities, broad cultural and historic interest, broad intellectual and artistic interest, brotherly helpfulness untinctured by jealousy, brotherly love, carefree, charitable, charm, cheerfulness, cherubic, clinical wisdom, clinician and teacher, cordial helpful spirit, courageous, courtesy, cultured gentleman, curiosity about any subject, dapper, dearly beloved, deepest interest in everything human, delightful charm, democratic, desire to be of help to others, did not like missing a diagnosis, did not suffer adulation gladly, dignity, direct language, dominant personality, dynamic picturesque personality, effective speaker, eloquent, engendered devotion, enjoyed playing practical jokes, enormous drive, enthusiasm, epitome of the great physician, erudition, excellent diagnostician, excellent memory, expressive hands, extraordinarily gifted biographer and bibliographer, extraordinary capacity for friendliness, extraordinary capacity to stimulate others, extraordinary energy, extraordinary power of attracting men to him, eyes were deep dark rich brown, at rest grave and even sad, sometimes severe, usually warm, glowing, kindly, sparkling

and dancing with merriment; faculty of making friends, familiarity tempered by reserve, familiarity with philosophy and literature throughout the centuries, fancy for the bizarre and unusual, fine taste and appreciation for the best in literature, forgot nothing, frequent quips, freshness of mind, friendly, gaiety of heart, gave sound and useful advice, gay, gay of heart, generosity, generous benefactor, generous wisdom, genial, giving credit to everyone, God-given quality of holding friendships with unforgetting tenacity, good humor, good listener, good memory, good will toward his fellow man, graceful, graceful literary style, great and just discrimination, great capacity for appreciating and loving his fellows, great civic leader, great generosity, great in learning and scholarship, great personal charm, great physician, great wisdom, greatest personality in the medical world, habit of observing carefully and describing clearly, handsome, happy nature, held in affectionate regard by patients, helpful, high sense of honor, humility, humanity, high spirits, honesty, humane and human, humanist as well as a scientist, humble, ideal physician, ideal teacher, idolized by students, imperturbability, imperturbable friendliness, important impact on medicine, incapable of offending, indescribable charm, industrious, infectious enthusiasm, infectious personality, informality, inspired respect and affection, intensely human, intensity of purpose, interest in others, interested in everything, intimacy of address nothing less than fraternal, intolerant of tardiness in others, invariably punctual, keen appreciation of the importance of ethical matters, keen sense of humor, kindliness, kindly glance, leader of men, leading light in medical societies, learning and wisdom of a sage, light springing step, likable personality, literary skill, lithe alert erect figure, lived richly and well, lively sense of humor, logical approach, lovable, love for both science and literature, love for mankind, love of a practical joke, love of fun, love of his fellow men, loved practical harmless jokes, lover of his fellow men, lover of mankind, made many valuable contributions to medical knowledge, magic attraction, man of letters, master clinician, master of the quip and epigram, masterly style of writing, mind and body geared to high speed, mischievous, mischievous whimsies, model physician, most open hand, most outstanding physician, most vivid leader in medicine, never demonstrative, one of nature's chosen, one of the most popular men, original, Osslerian childishness, Osslerian hoax, outstanding judgment, overflowing humanity, past master in the art of psychotherapy, peculiar mixture of foolishness and thoughtfulness, perfect simplicity and directness, personal magnetism, perennial boyishness, perfect self-control, pervasive enthusiasm, philosophical viewpoint, photographic memory, playful wit, potent ferment, preached and practiced humility, professionally incomparable as a diagnostician, punctilious in professional relations, quick apprehension of the kernel of the situation, quick steps, quick mobile face of somewhat olive tint, quippish comments, Rabelaisian sense of humor, radiant with good feeling, rapport with patients, rare combination of gifts, rare literary skill, ready wit, refreshingly influential in promoting high standards of medical education and research, remarkable camaraderie, remarkable learning of the Greek and Latin writers, resented jokes played on him, respect of all who knew him, retentive memory teeming with instances and examples, rich knowledge of biblical lore, richly human personage, sagacious, sane judgment, saying evil of no man, scholarly achievement, seemed not to walk but to run, sense of the dramatic, simplicity, sincerity; singularly attractive qualities of mind, heart and character; skill for narrative, slender, springy step, sparkling wit, strong appreciation of the jocose, subtle humor, sunbright personality, swarthy, sympathetic friend, sympathy, systematic habits of work, taciturn, therapeutic nihilist, thoughtfulness, tolerant, tremendous influence on medical thinking, truly exercised charity, twinkling eye, universal sympathy, understanding, unfailing humor and tenderness, unfailing wit, unique personality, unsurpassed diligence, unusual composure and poise, unusual personal qualities, unusual power of succinct statement and picturesque expression, unusually well informed, utter unselfishness, versatility, vigorous, vitalizing influence; quiet, even, rich and sympathetic voice; walked with arm passed through arm or over a shoulder, warmest heart, warmth of manner, warm personal interest, wide knowledge of medicine, widely loved, widely read, willingness to fight for a principle when it was vital, will to work, witty, witty remarks, wonderful pathologist, world famous physician, world's best doctor, young man's friend, young physician's friend, zest for work.

(c) In reply to my enquiry, Dr. W. W. Francis of the Osler Library at McGill University wrote that this herbal (Macer Floridus, Basel, 1559) had Osler's inscription on one fly-leaf "Given to me by my colleague, Sherrington, Nov. 1915," and on another in Sherrington's hand "Gulielmo Osler per Car. Sherrington, Dec. 1915," thereby acquiesing in the expropriation. Dr. Francis also wrote that there was a similar "incident," concerning the earliest modern textbook of physiology, the first edition of Descartes's *De Homine*, Leyden, 1662, with interesting plates, woodcut, engraved, and dissected. It is inscribed on the title, C. S. Sherrington, Caius Coll. Camb. 1888. After Osler's death, Sir Charles S. Sherrington told Dr. Francis that he had LENT this to W. O. in 1914. About 1916 he found the book when W. O. was out, saw that W. O. had written on the fly-leaf, "Given to me viii.16.14 by C. S. Sherrington," hadn't the heart to disillusion him, and so added just above W. O.'s inscription, "E. libris Gulielmi Osler 1914," condoning the deed. He wouldn't take it back, even for his lifetime."

(d) It is difficult for the younger generation to realize that white coats were not generally worn by members of the staff until after World War I. In fact, many hospitals did not even furnish uniforms to interns; the Hopkins did not succumb until 1921. Those used in Philadelphia in Osler's day evidently were discarded Yankee Army blues. I never saw Sir William wear a white coat. Indeed, even when he did an autopsy, as he did whenever the diagnosis was in doubt, he rarely wore an apron, in spite of photographs to the contrary. He just hung his frock coat on the nearest projection (the altar cross in one autopsy I saw him perform in a chapel).

(e) "The rapid increase of knowledge has made concentration in work a necessity; specialism is here, and here to stay. The desire for expert knowledge is, however, now so general that there is grave danger lest the family doctor should become, in some places, a relic of the past. A serious danger of specialism is too little training; the men most prominent in special lines of medicine and surgery devoted their earlier years to anatomical, physiological, or pathological students" (Osler, William, Boston M. & S. J. *126*: 457-459 (May 12) 1892).

(f) *Osler-Vaquez Disease* (chronic cyanosis with polycythemia and enlarged spleen). *La maladie d'Osler* (chronic infectious endocarditis or subacute bacterial endocarditis). *Osler's nodes* (painful nodular areas of erythema, usually of the hands and feet in bacterial endocarditis). *Rendu-Osler-Weber Disease* (hereditary hemorrhagic telangiectasis). *Osler Erythema Group of Skin Lesions with visceral manifestations* (anaphylactoid purpura).[58]

(g) In reply to my enquiry for data for this paper, Dr. Hesekiah R. Saiki, of Nusomachi, Nakachoja, Kyoto, Japan, replied: "Sir William Osler was my very dear teacher for over three years. I was first graduated in medicine in Japan in 1882, and was sent by the Japanese Government (the Navy Department) to the U. S. A. to finish my study. I entered the University of Pennsylvania in 1886 in the third year class and was graduated 1888. I stayed one year after graduation, as an intern in the University Hospital. During these three years Dr. Osler was the Professor of Clinical Medicine. He was very kind to me always."

(h) Not just the Government postal, but a neatly printed private mailing card requiring a stamp. I have saved all of these he sent me and they are most prized.

Service Medicine's Ante to Medical Training and National Preparedness*

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Any expression, either oral or written, which is devoid of a purpose is quite likely to be as "a tale told by an idiot, full of sound and fury, signifying nothing." I want, therefore, at the outset to say that, the purpose of this offering is, first, to acknowledge, on behalf of the Armed Services, their dependence on civilian medicine for their ability to exist and operate, and to express their genuine appreciation for the support, cooperation and sufferance or indulgence they have been accorded by civilian medicine. Secondly, it is my desire, lest they forget its record and role, to remind members of the medical profession in civilian life of the part service medicine has played and is continuing to play in medical education concomitant with and integral to the fulfillment of its fundamental mission in behalf of the Nation's welfare. This role is one which, in some instances, service medicine is alone able to play and is in all instances peculiarly well qualified to play.

There is, and understandably so, a proneness on the part of civilians, by and large, and civilian doctors in particular, to regard the sphere of interest and usefulness of the service doctor as rather restricted in scope and degree. This attitude is especially prevalent among civilians who have never served as members of the Armed Forces. It is my desire to point out how the interests of civilian and service medicine are closely interrelated; how each is dependent on the other and how the mission of one complements that of the other.

To give first consideration to the matter of medical education, I need merely to say that were it not for the undergraduate teaching facilities operated solely by the civilian element, the medical services of the Federal Government, armed and otherwise, (and by otherwise I mean Public Health and Veterans), would not have doctors. From having been for several years a member, and at one time President of the Examining Board whose function it was to examine and select candidates for the Naval Medical Corps, I became keenly aware of the quality and quantity of medical education which was being imparted to medical students in the 70 odd medical schools throughout the land. This impression has been confirmed during later years by experiences incident to my membership on the National Board of Medical Examiners and my association as the Navy's liaison officer with the Association of American Medical Colleges. Regardless, however, of the excellence of the curricula in medical schools, by and large, the graduates of the best schools would be inadequately trained for duty in the Medical Corps of the Armed Services were it not for postgraduate

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instruction given the doctors of the Medical Departments of the Army, Navy and Air Force, by the Army, Navy and Air Force.

One of the prime paradoxes in the profession of medicine has been the insouciance with which epidemiology or preventive medicine has come to receive emphasis commensurate with its importance in the curricula of medical schools. A similar situation for years obtained with respect to a group of diseases which although not necessarily limited to tropical and subtropical latitudes, are commonly referred to as tropical diseases. It was largely predicated on the Navy's recognition of the paramount importance of preventive medicine, and of familiarizing its doctors with particular diseases with which they would be called on to deal in the far flung corners of the earth and for which they had not received adequate preparation in their regular undergraduate courses, that the Naval Medical School was established fifty years ago.

The Navy's prowess in the field of tropical medicine stems in a significant measure from the emphasis given this category of diseases by the late illustrious Edward Rhodes Stitt, erstwhile Surgeon General of the Navy.

During both World Wars I and II the loss of manpower from communicable and epidemic diseases among Navy and Marine Corps personnel was inestimably curtailed by reason of the special training in the control of such diseases as had been meted out to many doctors through the facilities of the Naval Medical School. World War II, I believe, was the first war in which this nation has participated when the mortality rate from disease did not exceed that from enemy bullets or other man-made agents of destruction.

But to come to a consideration of the present day situation; while the heads of the Medical Departments of the Armed Services are cognizant and appreciative of the part civilian medicine, and particularly the Association of American Medical Colleges, is playing in insuring better trained doctors, the Armed Services are likewise supplementing civilian training by an exceptionally specialized and highly important variety of postgraduate training. I should like to observe albeit, that much of this pedagogic responsibility assumed by the services is not presumed to be possible of fulfillment without the aid of able civilian assistance in the way of consultants and teachers.

It is keenly realized that the sphere of interest of the Association of American Medical Colleges is by no means confined to the undergraduate field. Witness as a prime example the acceptance on the part of the Association of American Medical Colleges of the task of developing and maintaining a Medical Film Institute. This institute had its inception in the Navy 2½ years ago. When it was found, however, that circumstances militated strongly against this endeavor being administered within the reference framework of the Government of the United States, the problem was presented to the Association of American Medical Colleges and it was the foresight and faith on the part of this Association's representatives that were responsible for the film institute's survival and its present state of health. And so, here is an instance in which a bond has been welded between service and civilian medicine. While the fruition realized on this score to date represents an accrual from the interest and

effort of a number of people, certainly if one or more individuals are meritorious of special credit for the implementation of this endeavor, those individuals are Dr. Fred C. Zapffe, Dr. Walter Bloedorn, Dean of George Washington University School of Medicine and Captain Robert Schultz, MC, USN, Director of the Audio-Visual Aid Section of the Navy's Bureau of Medicine and Surgery. Others who merit special recognition for their contribution and devotion to this cause are Dr. Joseph Markee of Duke University, and Dr. H. J. Walton of the University of South Carolina. That the advance of medical films will be accelerated by the Medical Film Institute, there is no doubt. Medicine will have reason to be grateful to the Association of American Medical Colleges for fostering a facility which has been so much needed for so long. Suffice it so say, that the Navy will lend it every support possible.

It seems worthy of emphasis that the services operate training centers for instruction in the medical aspects of special weapons and radioactive isotopes, the like of which training it is believed is not elsewhere obtainable in the world. The Medical Department of the Navy provides training in a number of categories or areas which will stand the individual trained and through him, the nation is in good stead, come a future war. I should digress slightly at this point to interpolate that my observations with respect to the Medical Department of the Navy are, in the main, applicable equally to the Medical Department of the Army and in a comparable measure, to that of the Air Force. The services take in civilian trained interns and after two years return them to civilian life possessed of, at least, a good basic acquaintance with the service. These sojourners go out and back back to civilian life with a kindly feeling for the Services (we hope) and therefore, are potential missionaries of a sort. We know that not all leave the Services with a kindly feeling. We also know that not all civilians are always satisfied with the hand fate deals them as civilians or that they deal themselves.

The Armed Services take in civilian trained residents and after from three to six years (depending on their length of time in a civilian residency during which they are subsidized by the Services) they may return to civilian life. During their time in the Service they will in many cases,—to some extent in all cases—, have acquired an indoctrination of a highly specialized type, such as in the various aspects of biological and chemical warfare and in the implications of atomic warfare, as well as in the practical application of atomic energy in the diagnosis and treatment of disease. An appreciable number of these doctors will have been exposed to a number of other special considerations such as warfare in the Arctic regions. As an important factor among the determinations which have so far been made with regard to operation under conditions of extreme cold should be mentioned that having to do with the essentiality of selecting and properly training personnel for arctic duty, along with the observation that if food, clothing, housing and sanitation are maintained at presently acceptable levels, clinical evidence of disease and injury will not occur in these regions at a higher level than elsewhere.

Thus it must be apparent that doctors who have worn the uniform and

served with the Army, Navy or Air Force, will return to civilian life vastly more valuable citizens by reason of their military or naval service. The nation needs to be literally studded with men and women, too, with this especially important background and knowledge.

In this connection, it seems worthy of note that during the past year the first and, so far as I know, the only textbook on atomic medicine yet to come off the press, was published. Its editor is a Captain in the Medical Corps of the Navy. All of the doctors or devotees to sciences allied to medicine who contributed to that book, with one exception, wear or have worn the uniform of the Navy. In other words, they are members of the Navy as either regulars or reserves.

Several years ago, the Medical Department of the Navy published a Radiological Safety Manual which is recognized everywhere as one of the best things of its kind in existence. About the time of the latest revision of the Manual of Radiological Safety, that is nearly two years ago, the Navy published as a supplement to its Medical Bulletin, a 215 page volume devoted to radioisotopes. The cover of that issue, incidentally, contained the formula of a carbon cycle by which the sun produces its energy. This publication received the same distribution as is accorded the Naval Medical Bulletin, the distribution list of which was over 25,000. I use the word "was" advisedly since beginning the first of this year the Naval Medical Bulletin, in the onrush of the tide of unification, gave way to a new journal, the title of which is "United States Armed Forces Medical Journal."

By the first of July of this year the Medical Department of the Navy will publish a volume of monumental importance. I refer to an Atlas of Pathology, the like of which, to my knowledge, has never been undertaken elsewhere in the world. It will have, by this summer, been six years in the making. It would not have been begun but for a set of conditions that never would have obtained had it not been for the realization of certain requisites which were forthcoming only in response to a stimulus of such magnitude as a major war might occasion. In order that this book may have a vehicle which would give it international circulation it will be published by the Lippincott Company and its text will be translated into a number of foreign languages.

As a further illustration of a pioneering interest on the part of the Navy, I might mention that as of this writing one of the few organized Bone Banks in the U. S. is now in being at our Naval Medical School, National Naval Medical Center, Bethesda. There is, moreover, in process of being established there, a Skin Bank.

To go back to the specialized type of training of medical personnel with which the Navy deals and to cast some additional light on the number of individuals who have received training in such fields as in A B C warfare during the past few years (in this instance A B C stands for Atomic, Biological and Chemical), the following facts and figures are cited:

At the U. S. Naval Damage Control Center, Treasure Island, California, 148 people have been trained in the medical aspects of atomic defense. The

course is from two to eight weeks in length. During the academic year 1948-1949, more than 1,000 representatives of the Naval Service, including regular and reserve officers, enlisted personnel and civilian employees, attended the Army's Chemical Corps School at Edgewood Arsenal, Maryland. At the Naval Medical School, National Naval Medical Center, Bethesda, 991 physicians and dentists, who are members of the Naval Reserve, have received a course in the "Medical Aspects of Special Weapons and Radioactive Isotopes." This course is of one week's duration and has been repeated a number of times throughout the past two years. All of the expenses incurred by those attending this course are defrayed by the Government. Those attending come from every state in the Union. The type of training referred to in the category mentioned last has become increasingly popular and will be continued indefinitely. The Navy keeps a few members of its Medical Department under training at the exceedingly important and highly classified Atomic Energy Plant, Oak Ridge, Tennessee. Moreover, it has sent wearers of its uniform to such civilian institutions as the Universities of Chicago, California, Pennsylvania, Columbia, Rochester and Northwestern. In all, during the past two or three years, the Navy has provided a highly specialized type of training to between two and three thousand members of the medical profession or the sciences allied to medicine in the medical aspects of atomic, chemical and biological warfare. Comparable courses to those sponsored by the Navy are given by the Army; and the Atomic Energy Commission also provides a similar type of instruction.

The advent of atomic energy has probably brought with it the key to some of medicine's most formidable problems. Some time will undoubtedly be required for radio-isotopes and the like to be assigned their rightful place in medicine's armamentarium as either diagnostic or therapeutic adjuvants. In any event, the Medical Departments of the Armed Services have been in the van of new developments, new techniques and new concepts in this area. I cannot speak for the Army in this particular instance but I can say that out of the limited number of institutions in the Nation where radioactive isotopes are being used in cancer therapy, four such institutions are Naval Hospitals.

In addition to the attention which is being focused on the intriguing field of atomic energy and the fields of biological and chemical warfare with their horrendous potentialities, the Navy's Medical Department has participated in a number of unique and extremely important missions.

As examples of such missions, I would cite the sponsorship by the Medical Department of the Navy of a technical mission to Japan, September to December, 1945, for the purpose of studying firsthand the early effects of atomic radiation on human beings incident to the bomb explosions at Hiroshima and Nagasaki. And, again, from April to June, 1947, its participation with the Atomic Bomb Casualty Commission in Japan for the purpose of checking further on the later evidences of excessive exposure to the noxious rays which result from nuclear fission. Members of the Navy's Medical Department also participated in the epochal "Operation Cross Roads," which was consummated at Bikini, May to August, 1946. Subsequent to the Cross Roads project, the Navy's

Medical Department has taken advantage of every opportunity to enhance its store of knowledge and experience by participating in a number of expeditions and studies.

I have already spoken of our studies in connection with operations beyond the Arctic Circle. However, as one of the most interesting and potentially valuable of all the expeditions in which the Medical Department of the Navy has engaged during the past several years, I would place its participation in the University of California's Archeological Expedition in 1948 at the head of the list. On that occasion, a group of Navy scientists (doctors and devotees to the sciences ancillary to medicine), traversed by foot and jeep 15,000 miles on the Continent of Africa between Port Said and Capetown, with the result that there was brought out of Africa a richer collection of every type of vector and etiologic agent peculiar to the diseases to which man is susceptible on that Continent, than had ever been accumulated by a similar previous expedition. Since the primary motivation factor in our sending this expedition to Africa was that of obtaining information peculiar to the diseases indigenous to that continent, our foresightedness and initiative could, in this instance, account for the salvation of a countless number of man days in the event of a future, large scale troop mobilization in that part of the world.

And so it must be seen how, by participating in scientific missions of this kind, the Armed Services add to the sum total of medical knowledge and to the preparation of the Nation for the serious business of self preservation in case of war. It must, moreover, be apparent that the benefit which accrues from the participation of members of the Navy, or Army or Air Force, or all three, in missions such as those described above, is not limited solely to that measurable in terms of scientific gains strictly to the profession of medicine but in a much broader sense a great deal of good accrues to the Nation itself in terms of goodwill. Medical aids, whether in the form of protective vaccines, therapeutic medicaments, or helpful advice at the hands of a single doctor, will engender more goodwill among the Nations of the world than could ever be engendered by ten thousand airplanes with bombs, or a million soldiers with rifles. In an appreciable measure, the visit of a Navy ship to any foreign Nation constitutes something of a mission in which its Medical Department plays an important role.

Finally, I come to comment on the interest of the Armed Services in the sphere of medical research. The Services maintain close and intensely intelligent liaison with the Committee on Medical Sciences of the Research and Development Board. I have, in fact, been informed recently by a reliable spokesman that the aforementioned committee would fold up if it were not for the Military Services.

As a specific instance of our reliance on expert civilian authorities for advice and guidance in the important areas of teaching and research, it would appear worthy of mention here that the Medical Department of the Navy at present employs full time, two of the Nation's most prominent authorities in two scientific brackets, one, in biophysics, Dr. Kenneth S. Cole, lately of the Uni-

versity of Chicago, now attached to the Naval Medical Research Institute at Bethesda. The other, Dr. Howard T. Karsner, a renowned pathologist, lately of Western Reserve, but now in the Navy's Bureau of Medicine and Surgery at Washington. Distributed throughout our various teaching and research establishments we have many top flight civilian specialists along with a number of German super intellectuals that were obtained under the so-called "paper clip" or similar system. Just as research and education complement one another in conventional medical education, so do research and training go hand in hand in the development of competent medical military personnel. Indeed, it is quite accurate to say that the most significant purpose of the entire peacetime military establishment is encompassed within the scope that embraces research development, education and training. It is true that there must also be readiness—immediate preparedness for eventualities, which includes the medical care of peacetime military personnel. This latter is not a particularly specialized problem, because when people get sick they are just sick people whether military or civilian. It must be emphasized, however, that routine care of the sick is only one of the service medical officer's responsibilities, although in certain duty assignments such care may occupy practically his entire immediate attention.

The civilian doctor is taught to practice medicine in the civil community. An individual with such a fundamental medical background is capable of applying his learning to the military situation with a considerable, and variable, degree of success without further formal education. This is particularly so if several years can be devoted to the process of indoctrination and on-the-job training. For practical purposes, it has been found both conservative and profitable to formalize the research and educational effort of the medical departments in order to meet their specific needs as expeditiously and adequately as circumstances may permit.

It is fair to ask what these specific needs may be, and what influence training in them may have on the future usefulness of the military physician who returns to civil life. Perhaps, the most important and least well appreciated of these needs is knowledge of organization and the ability to function optimally within the organizational pattern. The physician is traditionally an individualist—not infrequently something of a prima donna. Most of us need to be taught organization. Nowhere are general organizational concepts better developed and more clearly stated than in the armed services. The ability to think and act in terms of broad social responsibility, without losing sight of the more intimate physician-patient relationship, is an attribute best developed in the atmosphere of military medicine. Individuals so schooled have contributed immeasurably to the orderliness and efficiency of facilities for medical practice throughout the nation.

One cannot think of medical organization without the concept of disaster relief. The military surgeon thinks in terms of mass handling of casualties. He is taught the best methods for individual patient care in all of our medical schools; but now he must develop competence in evaluating quickly the prob-

able number, severity, and diagnotic breakdown of group injured; he must know where and what help can probably be had, what improvisations can be made to satisfy the most urgent need. He is prepared to evaluate the damage potential of newer weapons of warfare, to treat situations realistically, to dispel fear and quiet the hysteria attendant upon novel and horrible circumstances. He has modern knowledge, for instance, of radiation effects and dangers to personnel from such contamination, because he has been taught this as a part of his military medical training. The teaching is based upon the experience of past war situations as well as the results of continuing pertinent reasearch.

Man, in his ceaseless struggle to subdue nature, is forever venturing into new worlds. At first, he is unprepared for these, and nature takes her just toll. Gradually, the experience, learning and experimentation of the pioneer is conveyed to larger groups, who then become capable of more safely exploiting the new opportunity. In this sort of business, the Armed services have always been preeminent, and Service medicine has made its reasonable contribution. An expedition to tropical areas may involve unanticipated hazards in disease transmission, new vectors, different hosts, even previously unreported entities. Polar expeditions teach the trained medical observer the limitations of human endurance and suggest methods and equipments to improve it. Considerations of epidemiology, acclimatization, diet and sanitary engineering present varying problems in differing latitudes and climates, and often suggest promising experimentation for the laboratory at home.

At this point I want to say that insofar as the Medical Department of the Navy is concerned, there is an important medium of operations which is on the land and in that hybrid medium of ship-shore or in the sphere commonly referred to as amphibious medicine. This is strictly naval and military medicine. To practice it certain fundamental attributes are essential in individuals so engaged. Among these attributes, in addition to a knowledge of epidemiology and preventive medicine, internal medicine and several varieties of surgery including general, orthopedic, thoracic and neuro; to adequately fill the bill the doctor on amphibious operations is expected to fill, an inordinate measure of physical stamina and intestinal fortitude are necessary.

It devolves upon members of the Medical Corps of the Armed Services to attain a proficiency in the application of the art and sciences of medicine in such a number of categories as to bespeak undeniably the justification for military and naval medicine as a separate specialty within itself deserving of its own Board of Certification. Thus would a segment of doctors, whose mission is of vital importance to the Nation, be given due recognition and thus, perhaps, might be alleviated some of the hysteria extant in the minds of many doctors in the Services over becoming certified by one of the already existing specialty boards.

Whether traveling over the earth or the surface of the sea, high in the air or deep beneath the waters of the world, the Navy has unique problems which concern, in general, the adaptation of man to novel environments. Information gained through experience and experiment consistently enriches the

sum total of knowledge in basic medical sciences. When of specialized applicability to the Naval Service, its communication to medical officers for use in the field is logical and necessary and constitutes another reason why specialized medical education within the services is so inevitable.

It must be apparent really that if it were not for the role played by the Armed Services, as is presently the case, medical education in America would be woefully inadequate. In the curriculum of any teaching institution thinking and methods tend to become stilted. I believe the conventional type of professor is apt to be adamantine in his concepts to such extent, indeed, as to live in a world that is larely his private world. Frequently, such individuals have an antipathy towards anything military. All of the foregoing considerations and views assume particular importance in the light of any contemplation of a future war, for if the next war conforms to the pattern to which it seems likely at this time that it may conform, the spheres of responsibility of service and civilian medicine will be practically indistinguishable or inseparable.

There is one remaining consideration which, although it may not ordinarily be regarded as belonging within the scope of medical training, certainly bears a sufficiently close relationship to it to warrant its being mentioned in a presentation of this kind. I refer to physical fitness. This is a count on which there is much ado when war clouds gather but enthusiasm for it is notoriously apt to wane along with the tumult and the shouting at the conclusion of war.

In any event, the Medical Departments of the Armed Services continue to manifest a general interest in this important area and through their offices a well advised physical fitness program is maintained in operation for the uniformed personnel in all branches of the National Defense structure. As an illustration of the Navy's concern in this regard; during the past year the Medical Department of the Navy sponsored and sparkplugged the publication of a little brochure entitled "Feel Alive" or "Operation Fiddlefit," copies of which were distributed to every officer in both the Navy and Marine Corps. It seems reasonable to assume that the net result of the influence of that measure will be not only an appreciable prolongation of the aggregate life of its readers, but the realization of a fuller measure of efficiency and satisfaction out of that life.

Whether what I have pointed out in this offering will significantly impress anyone, I am entirely at a loss to know. In any event, I have sought to bring to the bar of judgment of one of American medicine's most worthy societies the case of service medicine with the hope that a better understanding and a fuller realization of its relationship to civilian medicine might come to obtain.

I have attempted to show that if it were not for a joining of hands by military and naval and civilian teaching agencies, certain gaps in medical education in America would remain unbridged. I want, moreover, to say that the medical departments of the Armed Services not only augment the Nation's facilities for doctors but by a free intermingling and joint participation they augment the facilities of each other. Never has the rapport among the services been closer; never their mutual understanding better.

In this instance, my role I think, may be likened to that of Pheidippides,

the Greek runner who, in 490 B.C., Greek mythology would have it, ran all the way from Marathon to Athens bearing the news of the victory of the Greeks over Darius the Mede. I bear no news of victory on this occasion but I do bear assurance of an abiding vigilance and an enduring insistence on the part of service medicine's administrative chiefs in Washington that the fundamental and time tested precepts and tenets on which their organizations are based be respected and adhered to until reasons which will stand up under seasoned and considered scrutiny may be adduced for changing the existing order. Thus, are they constrained to defend certain bastions lest the ability and efficiency of the Medical Departments over which those administrators hold sway be seriously impaired for the fulfillment, not only of their war time mission, but of their peace time mission as they envision that mission and which is such as has been herein defined or described. While it is sufficiently realized and desired that modification and rectification of the alignment in their Medical Departments must be inevitable as a concomitant of progress and will be salutary to their departments, to the National Defense Establishment and to the Nation as a whole, if adopted and judiciously implemented; a dim view is taken, nevertheless, of any proposition the implementation of which would, in the name of economy notwithstanding, effect a change merely for the sake of change.

If a slight digression may be permissible, I would point here to the enjoinder of Marcus Aurelius: "Observe constantly that all things take place by change and accustom thyself to consider that the nature of the universe loves nothing so much as to change the things which are, and to make new things like them." It was probably meditation in a like vein that led Voltaire to make the observation that "the more things change, the more they remain the same thing." But it is simply human nature for people to admire what is new. And it is this inherent human attribute that makes, in an appreciable measure, for the attractiveness of the concept of unification of the Armed Services. This human frailty, if such it may be termed, appears to be as old as the human race. We have positive evidence of its having been recognized at least 300 years B.C. by Hippocrates, and again I quote: "People rather admire what is new although they do not know whether it be proper or not than what they are accustomed to and know already to be proper, and what is strange they prefer to what is obvious." The idea of unification is new and strange and therein rests considerable of its appeal.

I believe I can speak for the administrative heads of the Medical Departments of all the Armed Services when I say that while favoring a maximum degree of unification within the bounds of efficiency and within the law, they all advocate and contend for the maintenance of individual medical departments (not just medical detachments) commensurate with the peerless obligation it is their duty and privilege to meet. They are immutably wedded to the tenet that their medical departments are and should be accountable for medical and logistic support directly to their respective Line commands. Indeed, this is held to be a truism as axiomatic and irrefutable in its logic as is the military maxim that authority and responsibility go hand in hand. These adminis-

trative heads, I am sure, all regard the maintenance of their highly specialized training programs as of exceeding importance to their individual service branches, to American medicine and to National Security.

And so, similarly as was the case with Pheidippides, the intent and purpose of my journey here to the fountainhead of medical teaching may be said to be that of reporting to you on medical matters of foremost concern to the Nation's Army, Navy and Air Force. And I would again remind you that similarly as was said by General Vandergrift for his Marine Corps, neither is the bended knee traditional with any branch of the Armed Services and an apologetic attitude is neither becoming nor in order for their Medical Departments.

The gist of my averment has been that those who follow the banner of the forces whose mission it is to shield, salvage and save, whether they wear the uniform of a branch of the Armed Services or civilian clothes, are bound by interrelation and are dependent and complementary to each other. Theirs is a type of understanding which must be quick to distinguish between the fallacy of idealism and fancy and the validity of realism and fact. Let service and civilian medicine, therefore, go forward in the rendition of their high service to humanity, intensely mindful of their common challenge, their common bond, their common denominator, their common responsibility and obligation not only to society,—its protection and security—, but to each other.

Man's Redemption of Man

Man's redemption of man is the great triumph of Greek thought. The tap-root of modern science sinks deep in Greek soil, the astounding facility of which is one of the outstanding facts of history. . . . Though not always recognized, the controlling principles of our art, literature and philosophy, as well as those of science, are Hellenic. We still think in certain levels only with the help of Plato, and there is not a lecture room of this university (Edinburgh) in which the trained ear may not catch echoes of the Lyceum . . . Professor Murray dwells on the keen desire of the Greeks to make life a better thing than it is and to help in the service of man, a thought that pervades Greek life like an aroma. From Homer to Lucian there is one refrain—the pride in the body as a whole; and in the strong conviction that "our soul in its rose mesh" is quite as much helped by flesh as flesh is by the soul, the Greek sang his song "for pleasant is this flesh." (President's address delivered by Sir William Osler at the University of Edinburgh in July, 1910, at the Annual Meeting and Conference of the National Association for the Prevention of Consumption and other forms of Tuberculosis) (Paul B. Hoeber, Inc., Med. Bk. Dept. Harper & Bros., N.Y. 1939)

1949 Scientific Award Ceremony

By

American Pharmaceutical Manufacturers' Association

in Honor of the

Association of American Medical Colleges

At the Waldorf-Astoria, New York City, on November 29, 1949

The American Pharmaceutical Manufacturers' Association annually makes a scientific award of distinction, at its midyear meeting, in recognition of a fundamental research contribution to public health in the field of drug therapy. The award is made on nomination by a distinguished scientific advisory committee. Dr. Elmer L. Henderson, president elect of The American Medical Association bestowed the award. It was accepted for the Association by Dr. Joseph C. Hinsey, president of the Association of American Medical Colleges.

Dr. Joseph C. Hinsey: In accepting this award made by the American Pharmaceutical Manufacturers' Association, I express appreciation for our member institutions in the United States and our affiliated institutions in Canada and the Philippines, for the Deans and for the members of their faculties whose work constitutes the basis of this award. It would be impossible to single out the individual areas of research which have contributed to this recognition, because they involve the whole field of biology and medicine. However, I should pay tribute to the fact that in these various fields of research, the staffs of our medical schools have enjoyed the cooperation and benefits of contributions of investigators in other departments of our universities, in privately supported institutes, in industrial laboratories and in numerous governmental agencies, some of which your Association has honored on previous occasions like this one. Significant advances have depended on team play and contributions from many sources in our own and in other countries. Likewise, the financial support of all this research in medical colleges has come from sources in addition to university and medical college endowments, such as private individuals, foundations, governmental agencies and industries such as are represented here tonight. In one institution with which I am acquainted, eight different pharmaceutical manufacturers have contributed concurrently to the support of studies on cardiac drugs in the department of pharmacology. For the current academic year, when the total budgets of our member colleges in the United States are estimated at 61 million dollars, approximately 21 million dollars is being provided in addition in grants for research. Of this 21 million dollars, about 25 per cent is derived from federal sources.

An "American Medical College Association" was formed at the Jefferson Medical College in Philadelphia on June 2, 1876, just about 29 years after the American Medical Association was started in the same city in 1847 with the belief that "a national convention would be conducive to the elevation of the standard of medical education in the United States." The first medical

college association held annual meetings until 1882. The next meeting was held in Nashville, Tennessee, on May 21, 1890, at which a reorganization took place to form the "Association of American Medical Colleges." The object of this Association, from the beginning, has been the advancement of medical education. On May 4, 1891, the first "Minimum of Requirements" governing admission of colleges to membership was set up. These requirements have been raised slowly but steadily. At first, these were that the member colleges admit students on the basis of a preliminary entrance examination. In 1901, this was changed to requiring graduation from high school; in 1914, to one year of college work; and in 1918, to two years of college work. Since 1938, three years of college work has been recommended but not required. In fact, most of our member colleges today require three or more years of college work.

In 1891, the minimum medical college course was defined as "a course of graded instruction covering a period of three courses of lectures, of not less than six months duration each—no two courses to be offered in the same year." It was not until 1899 that the requirement was raised to four years. Medical school inspections were started in 1905 at the time the Council on Medical Education of the American Medical Association was formed on a permanent basis. At the suggestion of this Council, under the leadership of the late Arthur D. Bevan, the Carnegie study was started in 1908. In 1910, the famous Flexner Report appeared.* This report was the outgrowth of first hand inspections of the then some 160 medical schools by Mr. Abraham Flexner for the Carnegie Foundation for the Advancement of Teaching and Dr. N. P. Colwell, then Secretary of the Council on Medical Education of the American Medical Association. As a result of the criticisms made and reforms advocated in this report, many of the poorer schools went out of existence and mergers of others took place. Today, proprietary schools have ceased operation and the total number of medical schools has been reduced so that only institutions maintaining certain standards are approved. An investment of about 250 million dollars by various foundations and private philanthropy has been a most important factor in potentiating the recommendations of the Flexner Report.

There have been certain underlying principles which have guided the advance of medical schools in the period since 1910.

1. There must be a minimum of two years of college education which precedes admission to medical school; including certain courses in physics, chemistry, English and biology.

2. The maintenance of a full time faculty in the departments of the first two years in all the schools and a nucleus of one in the third and fourth years of many schools. This has advanced medical teaching, research and care.

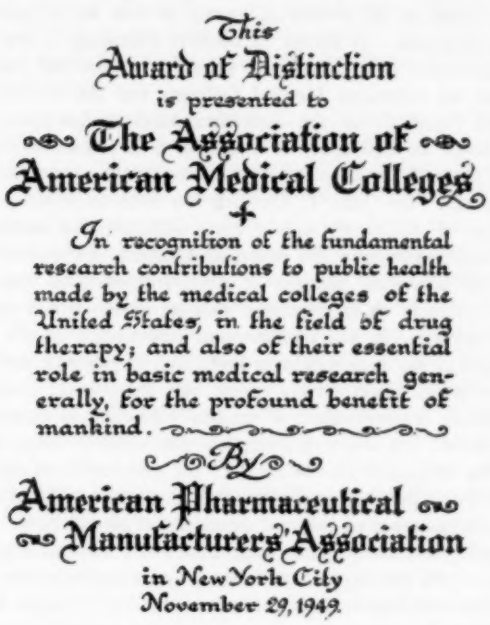
3. The development of adequate clinical facilities under the control of the medical faculties to provide for the appointment of the most able clinical

*FLEXNER, A.: *Medical Education in the United States and Canada* - - - - New York Carnegie Foundation for the Advancement of Teaching, Bulletin No. 4, 1910.

teachers and for clinical teaching of the medical students as clinical clerks.

4. The integration of our medical schools as divisions of universities so that today about 68 schools have such a relationship.

5. The devotion to the ideal that the most effective teaching is done in an atmosphere of medical research conducted with adequate facilities by teachers who are themselves investigators. As a corollary to this, we may emphasize that if medical research is to continue at a high level, it will only


This
Award of Distinction
is presented to
The Association of
American Medical Colleges
In recognition of the fundamental research contributions to public health made by the medical colleges of the United States, in the field of drug therapy; and also of their essential role in basic medical research generally, for the profound benefit of mankind.
By
American Pharmaceutical
Manufacturers Association
in New York City
November 29, 1949

be done over a period of years if the undergraduate medical schools continue strong and undergo forward development.

Now in its sixtieth year, the Association of American Medical Colleges has a membership of 78 medical colleges (72 four year and 6 two year schools, two graduate schools of medicine in the United States, 7 affiliate members in Canada and 1 affiliate in the Philippine Islands. We maintain a full time staff and offices in Chicago and publish the only journal devoted to medical education. We represent the producers of the medical personnel in this country and our primary concern is medical education, the advancement of its standards and the maintenance of a high quality of performance. From its beginning, the Association of American Medical Colleges has worked and cooperated with the Council on Medical Education and Hospitals of the American Medical Association in carrying on accreditation and other activities

of mutual interest in the advancement of medical education. However, it should be emphasized that we represent the medical colleges and are not a division of any other professional organization. In recent years, we have developed and encouraged close cooperation with various governmental agencies. Liaison officers represent the Surgeons General of the Army, Navy, Air Force and Public Health Service and the Medical Director of the Veterans Administration at the meetings of our Executive Council.

In spite of the advances that have been made in medical education during the past forty years, it has seemed important to take an inventory of existing facilities and programs. A survey of medical education is now being made under the supervision of a Committee appointed under the joint auspices of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. President Alan Valentine of the University of Rochester is Chairman of the Committee. An Advisory Council representing various segments of our society is being formed at present. Dr. John E. Deitrick has been at work during the past year as Director of this Survey and he has a full time staff working with him. Funds have been supplied by the Board of Trustees of the American Medical Association and additional support is contemplated from two foundations. In this comprehensive study, attention will be given to the preparation for the study of medicine in our colleges and universities, to the work of our medical colleges at the undergraduate level, and to graduate and postgraduate training. The broad objectives are to evaluate the present programs and determine the future responsibilities of medical education in its broadest aspects for the purpose of: (a) improving medical education to better meet the over all needs of the American people for (1) the prevention of disease, (2) the restoration, so far as possible, to health of all those who suffer illness or injury, and (3) the maintenance of the best standards of physical and mental health of all the people; (b) assessing the degree to which medical schools are meeting the needs of the country for physicians; (c) promoting the advancement of knowledge in the field of medical science; and (d) better informing the public concerning the nature, content and purposes of medical education.

Although some colleges have done a good job of public relations at the local level, by and large medical schools have not succeeded in putting across to the man on the street the importance of their contributions and of the role they play in maintaining and improving the nation's health. We have been criticized for our admission policies and for accreditation procedures. It has been said that we have been in collusion with the profession in keeping down the number of physicians. As Dr. Victor Johnson* has pointed out: "For two decades, the number of physicians has increased more rapidly than has the population of the country. It is anticipated that this increment will continue, with the establishment of new medical colleges. Since the beginning of the war, entirely new medical schools or expansions of former schools of

*Johnson, Victor; 1949, Medical Education: The Past Century and the Future. Transactions and Studies of the College of Physicians of Philadelphia, 4 ser., Vol. 17, pp 61-68.

basic medical sciences to the full four year status have been developed in Alabama, California, Los Angeles, Winston-Salem, Dallas, Utah, Chicago and the state of Washington. Others are contemplated in Florida, Mississippi, Missouri, North Carolina, West Virginia and elsewhere. There is now an annual increment (excess of graduates over deaths of physicians) of about 2,000. This increment will increase with the evolutionary growth of medical schools, and will continue to exceed the annual increase in the population at large." Our Association and the Council on Medical Education and Hospitals of the American Medical Association have assisted and cooperated in the formation of new schools where there has been promise of a high standard of performance, but we shall continue to resist ill conceived expansion which does not meet accepted standards.

We have given a great deal of attention to improving methods of admission. For the class admitted in 1948, there were 81,662 applications made by 24,242 individuals. However, this does not mean that all of these individuals were qualified for admission to a medical school. Of these, 6,688 finally matriculated. In the present first year class of the year of 1949-1950, more than 7,000 students are enrolled. Ten years ago this number was 5,794. The attrition rate in medical schools is relatively low because of the great attention given to methods of selection, but anything we can do to improve selection will result in more graduates for the practice of medicine. I wish to emphasize that medical colleges have increased their enrollments and that there has been an increase in the number of medical colleges. There are problems of distribution of physicians, with excess numbers in some areas and shortages in others. These problems will have their solution mainly by forces at work outside of medical schools. We can not dictate where graduates enter practice and I hope the time never comes in this country when dictation of this sort can come from any source.

Since the early 1930's, there have been three developments in this country that have had a retarding, if not a deteriorating effect, on the advancement of our medical schools. In the depression years, devaluation and the reduced income from endowments reduced a substantial portion of income by about one third. Private giving likewise was seriously reduced.

During the war, the programs were accelerated at a time when our staffs were markedly reduced. Furthermore, there was a virtual cessation in the training of young teachers and investigators. This year, the number of unfilled positions in preclinical departments is 10 per cent of the total positions. This shortage is of great importance in considering the formation of new schools and of marked increases in enrollments in existing schools.

In the third place, inflation during recent years has further reduced the purchasing power of endowment income to the point that today the purchasing power of this income to the schools is about one-half what it was in earlier years. Salaries, wages, and the cost of materials have gone up and schools find themselves unable to compete to hold some of the existing staff and to attract enough able younger men into academic medicine. With this difficulty

of maintaining existing programs under adequate standards, many schools have found it difficult or impossible to develop properly fields like psychiatry, preventive medicine, biophysics, nutrition, geriatrics, industrial medicine, physical medicine and rehabilitation and the social and economic aspects of medicine and to support the increased demands for graduate and postgraduate instruction.

During the present academic year of 1949-1950, the total budgets of medical schools have increased to about 61 million dollars, or an expenditure of about $2,500 for each student. Receipts from tuition fees will be about 14 million dollars, which represents less than 25 per cent of the total budgets. The remaining 47 million comes from endowment income, tax sources, private gifts, and other sources. On the basis of reports from individual schools during the past academic year at least 48 schools, of which 34 were privately supported, had deficits of 9½ million dollars. If these schools had expended funds on much needed advancement of salaries for academic and technical staff, and if justified additions to program had been made, the deficits would have been much greater. According to the 49th Annual Report of the council on Medical Education and Hospitals of the American Medical Association*, only eight of the schools have reported that they do not need additional funds. The majority have reported need for sums ranging from $100,000 to $400,000.

It might be argued that tuition fees should be raised, but it is sincerely believed that any additional increases in tuition would place financial barriers of such a nature that able students would be barred. Furthermore, it could be suggested that we either cut the cost of our present operation or add to the total number of students to increase tuition receipts. Either one of these would reduce the standard of training of our final product. Medical education today is the most expensive of all branches for the following reasons:—

1. Every medical student must experience an intensive individual training in classrooms, laboratories and hospitals before he can take on the care of the life and health of the members of our society.

2. A large number of teachers in proportion to the number of students must be employed. These teachers must be paid salaries that are not too far below those of their fellows of comparable training who are in industry and in private practice.

3. Extensive laboratories and specialized equipment are expensive to secure and to maintain.

4. The clinical facilities for inpatient and outpatient teaching must be extensive and teaching services in hospitals are expensive to maintain.

The costs of medical education cannot be assigned entirely to the undergraduate medical student. There are many additional students who are being trained in many medical centers, such as house staff (interns and residents), graduate fellows, various types of medical technicians, nurses, etc. It is difficult to break down or allocate teaching costs from certain research costs.

*Anderson, Donald G. and Anne Tipner: Medical Education in the United States and Canada for the Session 1948-1949. J. A. M. A., 141: 27-93, 1949.

There are many community services which are partially supported by these teaching budgets, such as community health centers, well baby clinics, cardiac and other specialty clinics, guidance of programs in affiliated hospitals, time given by staff members to governmental and community services, etc. Research grants may have little direct benefit to the medical college teaching budgets. In fact, they may prove a drain on them if not properly accompanied by adequate overhead.

Another confusing element in any cost analysis for the costs of undergraduate medical training is the contributed services of many very able physicians who participate in the teaching programs. Furthermore, the teaching hospitals make contributions that are not reflected in our teaching budgets. These costs are not reflected in the figures I have quoted. One of my friends has calculated that the donated services made by physicians in the cardiac clinics in New York City alone amounted to about 3 million dollars a year, based on an hourly income for physicians of what brick layers receive.

I cite some of the difficulties which we face when we try to arrive at the exact cost per year of training the undergraduate medical student. We may expect some help from the findings in the Survey of Medical Education. The average figure of about $2,500 per student per year will need some revision, but we may be certain that undergraduate medical education is expensive.

The public has been educated to appreciate the value of medical research and they are prepared to give generously to support research programs directed against poliomyelitis, cancer, cardiovascular disease and the like. What the public must be brought to realize is that more generous support must be given to undergraduate medical education if the foundation stone of medical research and medical care is to be maintained and developed as it should be.

Medical schools have three alternatives. Our thirty-seven state or municipally supported institutions can turn to their respective legislative bodies. As a matter of fact, while they are in a relatively better position in their access to tax dollars, than the 41 privately supported schools, they have met with resistance in certain quarters. Many of them need additional support badly.

All of us can turn to Washington for federal aid. At present, there is legislation pending (S 1453 and HR 5940) which provides emergency aid over a five year period for education in the health sciences. Many of our schools look to this source as a relief to their problems.

The third alternative, and I believe a must, is the stimulation of private philanthropy by an organized effort to gain support from the public through contributions from private individuals, the medical profession, corporations, labor unions and foundations.

The granting of this award this evening is a token of the appreciation which the National Association of Pharmaceutical Manufacturers' has of the contribution of medical colleges to medical research. We plead for your interest and support of what we believe to be our most pressing problem. If we are to conduct our work so that we will be eligible for this award for medical research in future years, we must have adequate support for a strong program of undergraduate medical education.

The Cost of Medical Education*

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Principal and Vice-Chancellor of McGill University
Montreal, Quebec, Canada

The cost of medical education has risen to a level that arouses widespread comment among those who are interested in either the health of the community or the welfare of the medical profession. Those are not necessarily synonymous terms, as we realize when we listen to discussions both among physicians and among laymen of national policies regarding what has come to be called "socialized medicine."

During the 1947-1948 academic session, the annual expenditure per student among approved medical schools in the United States ranged from a low of $735 to a high of $9,500.[1] No comparable statistics for all of the medical schools in Canada or Great Britain have come to my attention, but I can give one specific example in each case, and there is reason to believe that the example is neither the highest not the lowest. For Canada, during the same period, the expenditure per student in the Faculty of Medicine at McGill University (exclusive of the cost of training nurses, physiotherapists and others not seeking a medical degree) was $1,486. In the case of Great Britain, the per capita expenditure on the medical students enrolled in the University of London was £277, or $1,108 at current rates of exchange.[2]

Those figures are staggering in themselves, but there are two collateral aspects of the statistical picture to which I would particularly draw your attention:—

(1) The cost of medical education is much greater than the average cost of other types of education sought by students attending universities; (2) The cost of medical education is rising steadily.

In regard to the first of these points, the per capita expenditure on all full time students enrolled in American universities and colleges was $427[3] during the session under review—a figure that is less than two-thirds of the lowest medical figure quoted above, and only one-twentieth of the highest. In the case of Great Britain, the per capita expenditure on all full time university students was £203[4]—less than three-quarters of the average expenditure on medical students at the University of London. In the case of McGill, the per capita expenditure for all students, amounting to $624, was much higher than the average of all Canadian universities for that year ($432.02); but the expenditure on the education of the average McGill student was still less than

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*An address delivered before the Association of Canadian Medical Colleges, meeting at Laval University, Quebec, September 16, 1949.

1. *J. A. M. A.*, Sept. 4, 1948, p. 39.
2. University Grants Committee, Returns from Universities and Colleges, 1947-1948. pp. 14, 25.
3. President's Commission on Higher Education for American Democracy, statistical appendices.
4. University Grants Committee, *op cit.*

one-half the per capita expenditure on those enrolled in the Faculty of Medicine.

On many campuses in all three countries one hears suggestions (not less significant because they come from university men and women outside the Faculty of Medicine) that medical education is absorbing too large a portion of available university resources, to the detriment of other forms of education. Some critics, with long memories, point out that this is a distinctly modern trend; and, although I cannot quote any general statistics on that point, I find it interesting to record that the annual expenditure on each engineering student at McGill, which was 20 per cent more than the annual cost of educating a medical student as recently as 1920, is now no more than two-thirds of the per capita expenditure in the Faculty of Medicine.

That comparison, limited in time and space, is important, because it calls attention to the fact that it is the rising cost of medical education, rather than the high cost, which is the primary cause of concern.

For Great Britain, I cannot give statistical proof of this contention, but the paragraphs of the Goodenough Report[5] offer eloquent testimony. For the United States, Dr. Dolman's Report[6] records the fact that five years ago the annual expenditure per medical student ranged from $600 to $3,893—substantially below the present level—while the comparable Canadian sample from the McGill records shows a figure of $950 in contrast to the present $1,486.

In all three countries, moreover, the rising cost of medical education is accepted as a continuing phenomenon. The Goodenough Report and the Spens Report have been adopted as the basis of a policy under which the Government of Great Britain has provided what are to us in Canada staggeringly large sums for both the current operation and the long-term improvement of British Medical Schools. In the United States, the situation has not yet crystallized so fully, but both medical schools and their parent universities have asked the Federal Government for subventions of immense size;[7] while, in Canada, urgent appeals have been made to Provincial governments by each of the medical schools, and the traditions of the British North America Act have not restrained the National Conference of Canadian Universities from similar appeals to the Dominion Government.

What are the basic reasons for this rapid increase in the cost of medical education? What problems are posed for us by the prospect of further increases in cost? In my opinion, these two questions define the most significant aspects of the trend revealed by the statistics already quoted, and the remainder of this paper attempts at least a partial answer.

The first, and perhaps the most significant, reason for the rising cost of medical education is to be found in the tendency to replace part time clinicians by full time members of faculty, and I think it is interesting to note that, out of the three countries to which our statistics refer, the annual expenditure per

5. Report of the Interdepartmental Committee on Medical Schools; His Majesty's Stationery Office, London, 1944.
6. Report on Survey of Medical Education in Canada and the United States; University of British Columbia, 1947.
7. *J. A. A. M. Colls.*, November, 1948, pp. 355-360.

medical student is highest in the United States where the pattern of full time teaching developed earliest and is now widespread, and lowest in Great Britain where, prior to the present National Health Scheme, full time appointments covered the smallest proportion of the teaching staff.

It might be unwise for a layman, in this assembly, to discuss the relative merits of full time teachers, as compared to those of part time teachers, but I should be lacking in truth, and in a sense of the community's debt, if I did not point out that for more than one hundred years the leading medical schools of Britain and North America depended for their prestige (and, indeed, their existence) on the services of great physicians and surgeons who received little, or nothing, in the way of salary. To mention individual names would be invidious when even that small part of the galaxy comprising the Canadian medical schools encompasses so many stars. Each of you will recall instinctively some great teacher whose clinics you attended—and I hope that none of you will ever forget how much that teacher gave to his students in return for so little monetary reward. Much of the high tradition of the medical profession in regard to its service to the community stems from the sense of resopnsibility of those great men, and it will be a sad day for mankind if those traditions of personal responsibility for research and medical education should give place to a competitive catch-as-catch-can among physicians and surgeons for the dollars of the market place.

Those words are spoken soberly, because a second reason for the rising cost of medical education is to be found in the fact that, generally speaking, full time professors in the Faculty of Medicine demand higher salaries than men of comparable qualifications in other faculties of the university.

Far be it from me to suggest that any university salaries are too high. I have lived in universities for more than a quarter of a century, and each year has deepened my appreciation of the men and women who for modest (indeed, I would say in some cases absurdly small) salaries have given all their time and energy to education and research. University salaries are much too low at the present time, in terms both of the cost of living and of the rewards attainable in other professions, but the fact remains that salaries in the Faculty of Medicine are not as low as those in other faculties. That differential makes the education of medical students more expensive than the education of chemists, engineers or historians. It does more than that. It tends to weaken the harmonious relations within a university, as has become apparent in Great Britain during the past year. The splendid salaries for professors in clinical departments which were put into effect in British medical schools along the lines proposed in the Spens report may not be more than such eminent gentlemen deserve. But professors in all other faculties are asking (angrily, in some cases) why their deserts have been ignored. It is not good, in a university, to separate the sheep from the goats by an obvious price tag.

Third among the reasons for the rising cost of medical education is the phenomenal growth in scientific knowledge. Departments of bacteriology, biochemistry, biophysics, pathology and physiology—to cite no more than five—

have become larger and more important than they were a generation ago. Their ancestors a century ago were either insignificant in size or still unborn!

Each of these departments, and many others, require steadily increasing numbers of specialists. Each of the clinical departments, moreover, tends to intermarry with these newcomers to produce large families of brilliant children. Experimental surgery may be one of the offspring of traditional surgery and physiology; neurosurgery another. But a precociously brilliant offspring like neurosurgery, by a series of incestuous relations, can rapidly bring to birth neurophysiology, encephalography, and a host of other departments or institutes. Virus institutes may be born from the marriage of medicine and bacteriology, while endocrinological institutes are sometimes created, like amoeba, by fission.

Careful observers will have noticed that the creation of new institutes and departments seldom leads to any reduction in the activities or expenditures of the departments from which they sprang. On the contrary, the old departments clamor as urgently as the new for additional staff, more technicians and new apparatus, in order that research may extend the boundaries of human knowledge still further and make possible the creation of still more departments in the Faculty of Medicine. The fruit of past research, which has transformed the medical curriculum, and the present research activities, which threaten a further transformation, constitute problems which (although they differ from each other) are as serious for the financial officers of unversities as they are for medical students.

Fourth, and last, among the causes for the increasing cost of medical education, I should list the rising costs of hospital operation. This subject has been so widely discussed by specialists and laymen alike that I shall not here attempt any detailed analysis of what is, after all, a special problem. Suffice it to say that in those cases where a medical school operates its own hospitals, or contributes to the cost of operating independent teaching hospitals, the sums involved have tended to become an increasingly serious element in the total expenditure of such medical schools.

Many other factors could be brought into focus if there were time, since the costs of medical education have been subjejct to all the forces that have raised the general cost of living. But we are concerned here with the rising cost of medical education relative to other university activities, so that emphasis must be placed on special, rather than on general, influences.

Let us, then, turn our attention to the problems that are posed by this trend. If I can translate those problems into tasks, I would pick out three for discussion:

1. It is the task of each medical school, vis-à-vis its parent university and the community at large, to see that within the limits of the funds available optimum educational opportunities are offered to students. We must use wisely the funds entrusted to our care.

2. It is the task of both the medical school and the university to find ways to admit the most suitable students to medical studies, irrespective of their financial resources.

3. It is the task of the community at large to provide more money for medical education and research.

Stated in that form, there may seem to be little argument about the nature of those three tasks. But careful thought may provoke much controversy.

In regard to the responsibility of the medical school for the best use of the available funds, we must face the problem of the relative significance of teaching and research. All of the available evidence suggests that medical schools are responsible for more research investigations than at any previous time in their history, but are we doing as good a job of teaching students as our predecessors did fifty years ago? Perhaps medical students would not be regarded by this company as qualified critics on that point; but some of them complain that members of the faculty are more interested in their own researches than in the development of the student's mind and character.

To look in another direction: There is a tendency in large medical schools for each department to build itself up into a miniature faculty. The department of surgery wants its own physiologist and its own biochemist: it may soon want its own anatomist and its own zoologist. Medicine, neurology, psychiatry and other major departments, tend to become similarly diversified, until one is forced to ask whether the Faculty of Medicine is a companionship of scientists and clinicians working cooperatively for a common cause, or a federation of sovereign states, each seeking its own end. We must ask ourselves whether the present trend is a happy one in terms of the future development of medicine—because medical graduates tend to reflect the philosophy of the schools in which they studied—and we must also ask ourselves whether this trend is a wise one for the university as a whole, in terms of the optimum utilization of scarce financial resources.

In still another direction, we must ask ourselves whether medical schools might not maintain a more balanced judgment in the face of popular research "fashions." Nobody can doubt the seriousness of, let us say, cancer and polio. We must not cease from striving to find both cause and cure. But are we certain that there would be as many cancer research projects and polio research projects underway in our Canadian and American medical schools at this moment if public scare and popular fashion had not made money so easily available in these fields? It is my experience that each research project takes some money from the general funds of the university, in addition to all outside grants. It is certain that each research project takes the time and energy of able members of the faculty. Are we sure that money, time and energy are being spent in that fashion which, in the collective judgment of the Faculty of Medicine, is best for the medical student and the community?

On these problems I have only a layman's opinion. I can do no more than ask some questions, in the hope that out of your greater knowledge and experience answers can be found. I can, however, speak with greater confidence, as an economist, in regard to the other two tasks.

Although medical students pay, in fees, no more than a small portion of

the cost of their education—less than one-third at McGill—we must remember that the size of the fees which they are called on to pay each year has been increasing steadily; and, to make matters worse, there has been a tendency to lengthen the period that must elapse between matriculation and the final qualification that enables them to earn their own living. Fifty or more years ago, in terms of the general level of incomes after taxes, and of medical school fees, a man in moderate circumstances could afford to send his son through medical school. There would have been no medical celebration of the centenary of Osler's birth if that had not been possible, and many an eminent physician or surgeon has come from the manse or the rural farm.

That is seldom possible today. The families that can afford to send a boy to medical school constitute a diminishing proportion of the population of Canada, so that the applicants are preselected on a financial basis that has no relation to their fitness for medicine.

During the past few years, the policy of the Canadian government in regard to the education of veterans has enabled us to ignore this problem. Every man and woman from the armed services, with appropriate academic qualifications, could work for a degree without direct expense to his family. But the men and women now entering our medical schools are civilians to whom no such generous offer is open. If we, the medical schools and universities of Canada, are not able to offer scholarships to the excellent candidates for the medical profession whose families cannot finance their education, the average level of competence in that profession will inevitably decline during the years that lie ahead.

But if the universities are to provide scholarships for medical students, the money must be found from sources outside their present academic revenues. In a brief that was recently presented to the Massey Commission by the National Conference of Canadian Universities it was pointed out that university revenues throughout Canada have doubled during the past five years, while the number of students has increased two and a half times. In 1943-1944, the average expenditure per student was $515.49; in 1947-1948, in spite of rising wages, rising prices of materials and rising costs of living, the average expenditure per student was only $432.02.

Those figures tell their own story, and that story becomes very grim when we remember that, since expenditure on medical students has increased during these years, the proportionate decline in the per capita expenditure in other faculties has been greater than the overall figures indicate. Canadian universities cannot afford to allocate a larger portion of their present revenues to the medical schools. They stand in urgent need of additional revenues for every segment of their work, and the quality of Canadian education will decline sharply if additional revenues are not forthcoming in the very near future.

The financial needs of the Faculty of Medicine, like the needs of other faculties, must be met by more generous financial support from the community at large,—by private donations and governmental grants.

Let us hope that the community will not turn a deaf ear to this appeal. None of the many natural resources of Canada is as valuable as the health of Canadian men, women and children; no wastage as tragic as that resulting from preventable or curable disease. If Canadian medical schools are to continue their struggle to protect the public health, they must have more money.

That money might come to us in many ways, but I should like to suggest two general considerations which, if they are consistently borne in mind, will enable Canada, as a whole, to reap the greatest advantages from its increased expenditure on medical education and research.

In the case of each medical school, the community will reap the greatest harvest if money is given in the form of a general grant, to be expended at the discretion of the university authorities and the Faculty of Medicine. Grants that are earmarked for specific purposes tend to warp the development of medical education and research; they are also apt to disorganize the work of the faculty. If the community has no confidence in the wise judgment of medical faculties and of the universities of which they are a part, our condition is parlous, indeed. If that confidence exists, it should be apparent that academic bodies are apt to be the best judges of the way in which the additional money can best be spent.

This suggestion is not intended to apply to the case of private donors, because there are few men or women nowadays whose resources enable them to finance an entire faculty of medicine at any of our larger universities. When a man gives his own money, he has a natural desire to give it for some project in which he has a special interest, some project in which the amount of his gift is likely to exert a decisive influence. The progress of medical science owes much to the special interests of such generous benefators.

But private gifts are not likely, in our generation, to provide the bulk of the financial resources that medical schools need. Income taxes and inheritance taxes have restricted the scope of individual philanthropy; and, in the case of government grants (on which the medical schools must increasingly rely), it is of vital importance that such moneys should not be earmarked for special projects. Indeed, heretical as it may seem in this company, I would suggest that the best results would be attained if comprehensive grants were made to the university as a corporate body of scholars and scientists, rather than to individual faculties.

As to the source of those grants, I hope that both Provincial and Municipal governments will live up to their past traditions of generosity, and, indeed, behave even more generously. But the second of my general considerations lies in the suggestion that the Dominion government, which has already contributed so handsomely to the general health and welfare of all Canadian families, must bear an increasing share of the financial responsibility for the future development of medical education in Canada.

Canadian medical schools, even when they are attached to Provincial universities, are not institutions bounded by provincial horizons. The medical

schools of Toronto or Manitoba train young men and women from all parts of Canada; they also send out Ontarians or Manitobans, trained in their halls and wards, to care for the health of Canadians in every corner of the Dominion. The medical schools of private universities like Dalhousie and McGill are equally national in the scope of their operations; and there is no authority in Canada, except the Dominion government, which has either the financial resources or the breadth of interest to ensure that medical education at all Canadian schools shall not fall below that high standard which is the best tradition of Canadian medicine.

We have come a long way since the days of Sir William Osler, whose centenary we celebrate this year. It will require not only the tireless labor of many great men, but an honest and heart-searching review of its activities by each faculty of medicine, and great financial support from the community, if our progress during the next hundred years is to march as rapidly.

Amiel's Thoughts

How much folly is compatible with ultimate wisdom and prudence? It is difficult to say. The cleverest folks are those who discover soonest how to ultilize their neighbour's experience, and so get rid in good time of their natural presumption.

We must try to grasp the spirit of things, to see correctly, to speak to the point, to give practical advice, to act on the spot, to arrive at the proper moment, to stop in time. Tact, measure, occasion—all these deserve our cultivation and respect. (Amiel's Journal: The Macmillan Company, New York, 129.)

The Student Clinicopathologic Conference A Device for the Teaching of Advanced Pathology*

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The course in pathology for junior medical students at the University of Illinois College of Medicine was altered one year ago to fit into the pattern of clerkship teaching. Drs. G. A. Bennett and R. W. Keeton suggested that the course become a combined effort of the departments of medicine and pathology. Accordingly, the authors designed a student clinicopathological conference exercise to satisfy the overall curriculum plan. In its basic form, this course does not differ from the course in junior pathology. But the cooperation of the two departments has resulted in a more successful approach to the teaching of both clinical medicine and pathology.

The course is given each trimester to that third of the Junior class which is assigned to the medical clerkship. It is taught conjointly by the instructors in pathology and medicine. It consists of (1) attendance of groups of students at autopsies, and (2) the presentation by the students of the autopsy cases in the form of student clinicopathologic conferences.

Group Attendance at Autopsies.—The students are divided into groups of three. When an autopsy is to be done, the group on call is withdrawn from whatever clinic they are attending, and they proceed to the autopsy room. Here they act as recorder, first and second assistant, respectively. The instructor in pathology supervises the autopsy, performed by a resident in pathology. The former reviews and briefly interprets the clinical aspects of the case, and as the autopsy proceeds he explains the pathologic findings, and finally correlates and summarizes all available data. This is an integral part of the course —the teaching of pathology at the autopsy table. Following the autopsy, the student recorder has no further duties pertaining to the autopsy. The first assistant prepares the gross protocol, and the gross anatomic diagnosis. The second assistant, 24 to 48 hours later, trims the gross material for slide processing, which is done by technical help.

Clinicopathologic Conference. This part of the course has two components: (1) The preconferences, and (2) the conferences.

Preconferences: After the autopsy, the student acting as recorder comes under the guidance of the instructor in medicine. The latter discusses the case with the student and guides him as to the pertinent material in abstracting

*From the Departments of Pathology and Medicine of the University of Illinois College of Medicine.

the history, laboratory data and clinical course. He also guides the presentation of the clinical material at the clinicopathologic conference. The other two students attend a preconference with the instructor in pathology. The latter reviews the microscopic sections, which the students have studied previously. Then he analyzes the entire case from the standpoint of clinicopathologic correlation. The first assistant is briefed as to the method of presentation of the organs, kodachromes, specimens, etc., at the clinicopathologic conference. The second assistant acts as discussant, and is briefed as to the aspect of the case to be emphasized at the main conference. These preconferences make possible individual and personal teaching.

Clinicopathologic Conferences.—These conferences are held three times a week, each for 50 minutes, with one of the instructors acting as moderator. A time allotment is made for each speaker. The student clinician presents the case for 15 minutes. The instructor in medicine then emphasizes the teaching aspects of the case for 10 minutes. The student pathologist then presents the pathologic findings with appropriate use of specimens, slides and photographic reproductions for 10 minutes, followed by a 10 minute discussion of the case by the student discussant. A senior member of the medical staff then briefly comments on important aspects of the case. The conference is then thrown open to questions. In the remaining time, the moderator summarizes the case.

The course[1] has the following advantages. It brings pathology into the perspective of clinical medicine, after the more didactic sophomore course in pathology. It trains the student to correlate symptomatology, physical findings and pathologic findings. It offers the student individualized and personal teaching. And, finally, it trains the students to prepare and present material briefly and succinctly.

The success of the course is dependent on close cooperation of the departments of medicine and pathology, and on much time consuming effort on the part of the instructors. Its popularity with the students is due to their active participation in the conference. They are stimulated to make their own diagnoses and to question the diagnoses of others before the pathologic findings are presented. It is this quest for answers and solutions of problems which makes the student conference an excellent teaching device.

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1. Recognition of the advantages of combined teaching by pathologists and clinicians has resulted in the establishment of courses for student clerks in surgical pathology and gynecological and obstetrical pathology that are similar to the one outlined in this report.

The Medical Teachers Association of 1867

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The November, 1949, issue of the *Journal of the Association of American Medical Colleges* contains a short description on pages 381-382 of the meeting held in June, 1876, in Philadelphia which was preliminary to a meeting in Chicago in June, 1877, at which was organized the American Medical College Association, the name of which was later changed to the Association of American Medical Colleges.

Another association, which preceded that of 1877 by ten years and of which the American Medical College Association was considered a revival, is seldom mentioned in articles on medical education of the present day.

The American Medical Association, at its founding in 1847, announced the improvement of medical education to be one of its major purposes. The first effort was to increase the length of the session in the medical colleges and met with some success so that by 1865 nearly all the regular medical colleges had a session of sixteen weeks.

The next effort was to improve the quality of preceptorial teaching which constituted 85 per cent of the weeks of instruction of the student who went on to receive the degree of Doctor of Medicine. A writer of 1835 designated the preceptorial part of medical education as "the ruins of the old system of private pupilage."[1] The success of this effort was meager.

The subject of medical education was discussed at the meeting of the American Medical Association in Boston in May, 1865, and it was suggested that a meeting of deans of medical colleges be arranged. As a result, about twenty deans, mainly of medical colleges of the Middle West, met in Cincinnati in the spring of 1866 and spent two days in discussing the rate of tuition with no attention to the medical curriculum.

The American Medical Association met in Baltimore in 1866 where a resolution was unanimously passed "that the Association most earnestly request the medical colleges of the country to hold a convention for thoroughly revising the whole system of medical instruction for the purpose of establishing more uniformity of time and a more systematic course of instruction for the whole."[2] A committee was appointed to arrange the convention with Dr. Nathan S. Davis of Chicago as chairman.

Twenty-three delegates, representing seventeen medical colleges, met in Cincinnati on May 3, 1867, and after three days of deliberation organized the Medical Teachers Association and adopted recommendations in which were four main innovations. First, that every matriculant in a medical college must establish by certificate or examination that he possesses "a thorough knowledge of the common English branches of education, including the first series of mathematics and the natural sciences. . . ." Second, that every medical student be required to attend three annual courses of medical college

instruction before being admitted to examination for the degree. Third, that the duration of a session be six calendar months. Fourth, that each medical college require the student to pursue three series of courses in the three sessions that he attended.[3] This meant a three-year graded course. Only two colleges had graded courses at that time, and these were of two years.

The second and third recommendations aimed to increase the number of weeks of instruction in medical colleges. Had they been put into operation, the minimum number of weeks required for the degree would have been increased from thirty-two to seventy-two weeks and the amount of time under the preceptor would have been decreased from 85 per cent to 52 per cent.

Two days later, the American Medical Association, meeting in the same city, approved this program by unanimous vote and urged its adoption by all medical colleges of the country.[4]

A circular dated Chicago, August 1, 1867, signed by Nathan S. Davis as chairman of the committee, was sent to all medical colleges. This outlined the proposed changes and argued for their adoption which could not become effective unless most of the larger medical colleges agreed to the plan.[5]

The response was meager. A few small institutions offered part of the program as optional. The result was that after a second meeting in 1868, the Medical Teachers Association became inactive. The major benefit was that the innovations received considerable notice in many medical journals and thus set men to thinking in preparation for reforms that were delayed many years.

This association was ephemeral but it was the first effort to propose a definite program of reform. No further concerted activity came until the meeting in Philadelphia in June, 1876. The Medical Teachers Association should not be ignored in the history of American medical education. It was the beginning of the advance that marked the closing decades of the nineteenth century.

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Internships and Residencies

REPORT BY NEW YORK COMMITTEE ON THE STUDY OF HOSPITAL INTERNSHIPS AND RESIDENCIES
New York City

With the onset of the last war, the intern schedules existing at the time were seriously upset and modified by the demands of the armed forces for medical officers. The majority of the graduates were allowed to serve only a nine months' internship. The educational opportunities offered them during their military service varied a great deal. Some men had the good fortune to be assigned to units which offered an opportunity for study and practice, while others served as field officers with less opportunity to improve themselves. The result was that a large percentage of discharged medical officers required further education and sought appointments as interns, residents or laboratory assistants, while others participated in refresher courses. Eventually, all the men were absorbed and found their place in more or less satisfactory positions in life.

During the war, home medical institutions were affected by reductions in teaching staffs, laboratory personnel and intern assignments. At the termination of hostilities, many hospitals did not return to the same type of internship they had formerly had. A one year internship was largely accepted. This was due, partly, to the fact that hospitals had become accustomed to a short rotating internship and, partly, to the fact that specialty boards required only a one year internship prior to training in a specialty, with expansion of residencies at the expense of more prolonged internships. In addition to that, medical officers had become conscious of the advantages which certification in a specialty offered during war time. The demand for special training, therefore, increased enormously, to the detriment of training for general practice.

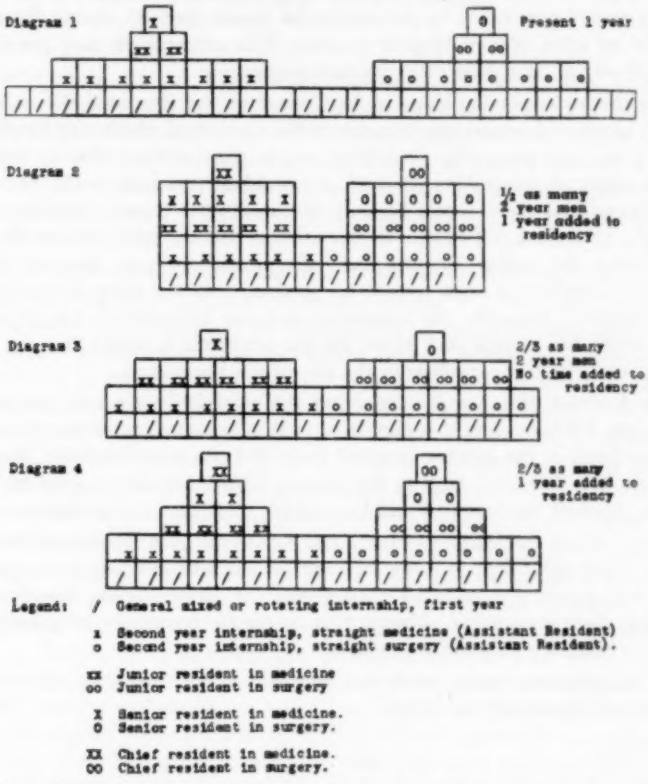
These different factors have contributed to the present confused situation concerning internships and have complicated still further the problem of intern placement. This year the results in the national placement program were disappointing to the hospitals because an insufficient number of graduates were available for the total number of internships offered (5,100 medical graduates for 9,118 internships*). The current shortage of interns among civilian hospitals is due to several factors. More approved internships are available than there were before the war and the institutions which formerly had a two year internship now require twice as many men annually for their one year internships. It is further accentuated by the number of medical men taken annually by the Army and Navy hospitals (more than 10 per cent of the graduates).

To find a solution for these problems, and at the same time assure adequate basic practical training to interns and residents, is most important. The problem is the same, whether they expect to engage in general or family

*1948-1949 figures.

practice, or whether they desire to prepare themselves for the practice of a specialty. The training of interns and residents must be considered a joint problem. Cooperation between medical schools, hospitals and other interested organizations is essential.

The New York Committee on the Study of Hospital Internships and Residencies is interested in the placement of interns and residents, their education



and their physical well being. The Committee is deeply concerned about the present unsatisfactory state and has given thought to possible remedies.

The discrepancy between the number of medical graduates available and the large number of approved internships is too great to be reconciled easily and completely. It is the opinion of the Committee that the introduction of a two year internship in all those hospitals with sufficient clinical facilities to warrant them, would aid a great deal in partially closing the gap. Such a plan would provide for the preparation of men for general practice, or for training in a specialty.

At present, many hospitals have a one year rotating internship, which is generally not considered adequate in New York City. The Committee believes that a good general internship could be arranged if it continued for two years. One year could be devoted to medicine and its specialties, and one year to surgery and its specialties. Such a plan would prove very satisfactory for the preparation of general practitioners. For those desiring to prepare themselves for the practice of a specialty, the internship might be arranged in such a way that a second year would be devoted to the chosen specialty, saving the necessity of an extra year of hospital training. This arrangement may permit the second year to be classed as an assistant residency.

In the accompanying diagram the Committee has illustrated the reduction in the number of annual appointments to the intern staff which may be effected with a two year internship. It will be seen in diagram No. 2 that by reducing the number of internships one-half, the resident structure would be rather top heavy, and there would be only two candidates a year available to go into the specialties. Of course, all this assumes that the total number of house staff which the hospital requires under the present one year internship is the minimal requirement with respect to personnel. In the setup shown in the accompanying diagrams, the committee used the hypothetical case of a hospital which has a house staff of 46, but the committee is certain that the same thing would be true regardless of the size of the house staff.

In diagrams Nos. 3 and 4 are shown the possibilities if a two year internship were instituted and the number of interns appointed each year cut down to two-thirds of the number required under the one year internship plan. In diagram No. 4, which suggests the plan of adding another year to the residency, one-half the interns would be available to go into the specialties.

It is evident that diagrams Nos. 3 and 4 offer the most satisfactory arrangement. Only two-thirds as many men will be required annually as at present. This will permit a more equable distribution of interns among hospitals. In addition there is assurance of better training for the future general practitioner and the residency program is simplified.

The Committee recommends that hospitals be encouraged to adopt a two year internship as outlined above.

Integration of Psychiatric Teaching in the Undergraduate Curriculum

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In recent years, due to the increased interest in psychodynamics, many changes have been made in curricula and methods of teaching psychiatry. Since there is need for critical estimation and formulation of better programs of instruction, it is important that experiments in teaching be carried out and that experiences be shared so that instruction in psychiatry for the undergraduate student may be improved and integrated more satisfactorily with other fields of medicine.

The advances in psychiatry during the present century have increased our basic understanding of behavior, thinking and feeling, and their relationship to the structure and physiology of the human being so that more knowledge is available which may be imparted to the medical student. Whereas, formerly the meager amount of time allotted to psychiatry was devoted exclusively to the demonstration of psychotic patients, in recent years the pendulum has swung in the opposite direction, so that now, in some schools, the teaching is entirely about psychoneurotic disorders. It is of foremost importance to give the student a well balanced understanding of the entire field of psychiatry, with the emphasis on the more common syndromes which he is most likely to have to appraise and treat.

The terminology of psychiatry should be clear and descriptive, with a minimum of reliance on similes and metaphors from physics, chemistry or mythology, and the emphasis placed on understanding the dynamic development of the human being in health and disease, keeping in mind what may be done in reorienting the patient toward achieving a better adjustment. It is desirable that the student have a broad comprehension of the cultural, biologic and psychologic aspects of human behavior which is essential in developing diagnostic and therapeutic competence. Although there is much that we do know, the great gaps in our knowledge make it necessary for us to have humility and to seek to increase our fund of information. Toward each patient the student needs to develop an investigative attitude combined with a friendly, tolerant, understanding approach. Theorizing without sufficient data is to be avoided by both teacher and student. A broad evaluation of the contributions of different approaches to the study of human behavior should be taught rather than an overenthusiastic and uncritical acceptance of any one school of thought. The student should be cautioned against the glib use of technical jargon as a substitute for a thorough grasp of the subject.

Whenever possible, there should be demonstrations of the relationship

between life situations, emotions, physiologic changes and symptom formation. These demonstrations using direct observation, chemical determinations or such recording devices as the electrocardiogram, electroencephalogram, pneumogram, bladder tracing or myogram give concrete evidence concerning complex psychobiologic phenomena and carry more conviction than can result from theoretical deduction.

The student needs to be aware of his own personality development and the motivating factors in himself which may be potent in influencing positive and negative relationships between him and his patients. The teaching staff should be available and willing to discuss his emotional problems with him so that he may be aided in functioning more effectively as an individual and as a physician.

In choosing physicians to teach various topics, the experience, interest and capability of the instructor should be considered in making specific assignments. At the present time, at the University of Washington, there are three full time, one half time, and twenty-one practicing psychiatrists on the faculty. In addition, members of the staffs of three state hospitals participate in the teaching. It is planned to enlarge the full time staff so that increased individual supervision and instruction can be carried out and so that the faculty will have more time to carry on investigative work.

In the introductory teaching of psychosomatic medicine in the third year, greater unity may be achieved by a teacher who has a comprehensive approach to medicine and who has had training in internal medicine and psychiatry as well as in the basic medical and social sciences. One physician with a broad outlook may be better able to eliminate the dichotomy between the psyche and soma and emphasize the totality of the human organism in society than two or more with viewpoints confined to the narrow range of their specialty. However, in the fourth year, the student who has developed a broad approach to human problems and a more mature judgment of medicine may be able to profit by conjoint conferences with members of several departments.

The orientation of the teaching must be for the student who will become a practitioner. However, the student will benefit by exposure to an atmosphere of scientific curiosity through association with those engaged in various fields of research. He also should be stimulated to recognize and investigate some problems for himself. Experience with the scientific method will not only help to develop investigators but will also inculcate future practitioners with the attitude that each patient is himself a problem in investigation.

Following is an outline of the courses given at the University of Washington School of Medicine:

First year: Psychobiology, 33 hours.

Second year: Psychopathology, 22 hours. History taking and the psychiatric examination, 12 hours (in conjoint course given by the clinical departments).

Third year: Child psychiatry, 30 hours; adult psychiatry, 30 hours; psychosomatic medicine, 30 hours.

Fourth year: Discussions of psychiatric treatment, 32 hours; psychiatric outpatient department, 16 hours; conferences on child psychiatry in the pediatric outpatient department, 5 hours; participation of the department of psychiatry in comprehensive public health conferences and conjoint conferences of the clinical departments. Externship in a psychiatric hospital, 4 weeks. Elective course in psychotherapy, 60 hours.

The first year course in psychobiology is given when the student is studying anatomy and physiology. The primary aim is to impart an understanding of emotional and personality development from infancy through old age and the adaptation of the individual to his environment. The biological basis is stressed, and comparative personality development is illustrated by studies of animal and human behavior. Correlation is made between the growth of the nervous system and the accompanying action patterns and emotional reactions of the maturing organism. The importance of the normal, intact central nervous system and its function is brought into focus by using examples of personality alteration following structural disease and surgical removal of parts of the brain. Time is devoted to the roles of heredity, constitution, physical changes and family and social relationships as determinants of the dynamic development of the individual personality.

The student is required to write a personality survey, using himself as the laboratory subject. This study is helpful in giving him an awareness of his motivations, attitudes, strengths and weaknesses and his interpersonal relationships. It also gives him a useful tool for studying patients and appreciating more fully the doctor-patient relationship. Throughout this course, every opportunity is taken to correlate psychobiology with the other basic medical sciences. From the beginning of his medical school career, the student is stimulated to think in terms of the totally functioning human being. The ever changing individual and the part played by the influences of the environment, consciously and unconsciously, are brought out in regard to such aspects of personality as emotions, intellect, attitudes, needs for satisfaction and behavior patterns.

In his second year, while he is learning the effects of disease on the tissues of the body, the student is taught about the abnormalities of thinking and feeling, the structural and psychologic factors producing them and their effects on the adaptation of the individual. Reactions such as anxiety, depression, elation, withdrawal, repression, compensation, projection and other defense mechanisms are discussed. The techniques in taking a history and carrying out a psychiatric examination and their place in a general medical and physical workup are taught during a conjoint course given by the various clinical departments on history taking, the physical examination and physical diagnosis.

Throughout the third year, the students spend three hours one afternoon a week on psychiatry. During the quarter in which they are studying pedi-

atrics and obstetrics they serve as clinical clerks in a children's psychiatric clinic. The first four sessions are used to give an orientation. Instruction is given in the relation of the child to parents and other adults, siblings and contemporaries, the function of social agencies, the patient's relation to family and community life, and the diagnostic and therapeutic indications in individual cases. Following this introduction, the students examine and treat children under close supervision and present cases for discussion at clinical conferences. In some of these conferences experience is obtained in the workings of a clinical team by the participation of psychiatrists, pediatricians, psychiatric social workers, clinical psychologists and psychiatric and public health nurses. Emphasis is placed on an understanding of the total dynamics resulting in behavior problems of children, treatment including individual psychotherapy for the child and parents, and utilization of community facilities.

During the quarter in which the students are having clerkships in internal medicine, seminars are held for groups of eight students on psychophysiologic relationships of the various systems of the body and syndromes in which emotional factors play a role. Experimental observations illustrating the relationship between situations, feeling states, physiologic effects, and symptom formation are used graphically to demonstrate to the student a rational scientific approach to psychosomatic phenomena. Attention is paid also to the influence of cultural factors in shaping the individual's attitudes and values and their relationship to disordered human function. Patients who have been worked up comprehensively by the students are presented at conferences where discussions on the pathogenesis and therapy are held by an instructor trained in both psychiatry and internal medicine.

During their clerkships in surgery, the afternoon in psychiatry is spent on the psychiatric wards of a general hospital. The first hour is devoted to a discussion of such major psychiatric conditions as schizophrenia, paranoid reactions, depression, organic and toxic psychoses, mental deficiency, alcoholism and other addictions, character disorders and perversions. The second hour is spent examining patients on the ward. During the third hour, a conference is held at which a student presents a case which is discussed by the group and the instructor.

Throughout the fourth year, there are weekly one-hour discussions of the different methods of psychiatric treatment illustrated with clinical cases. The student is taught proficiency in handling minor problems, what his limitations may be and the indications for seeking the advice of the trained psychiatrist. Four periods of four hours each are spent by the student in the psychiatric outpatient department of a general hospital. During the first three hours, he examines and treats patients under supervision. The fourth hour is devoted to a clinical case conference in which a clinical psychologist participates. Relatively little of the required time in psychiatry is spent in the outpatient department because, at present, there is a lack of facilities for the whole class. This need for outpatient experience has been fulfilled partially by an elective course which is available to twelve students and for which there has been

considerable demand. The student spends two afternoons a week for ten weeks in a psychiatric outpatient department and is assigned to a psychiatrist for individual supervisory conferences. Group clinical conferences are held with discussion by students, psychiatrists, clinical psychologists and social workers.

During the outpatient work in pediatrics in the fourth year, five one-hour conferences are held during which there is consideration of the role of personality factors in childhood illnesses. During the fourth year externship in public health and preventive medicine, each student does a comprehensive workup of a patient with whom he has previously had contact. This study includes consideration of general medical and psychiatric findings and an investigation of the environment including a visit to the home and discussion of broad aspects of the patient's functioning with relatives and, in some instances, employers, teachers, and others who may have had intimate contact with him. This complete workup is individually supervised by a social worker and a physician in the department of public health and preventive medicine. At the completion of this study, a monthly two-hour conference is held which is attended by the fourth year class, at which there is participation by members of basic science and clinical departments whose specialties might pertain to the patients under discussion. Similar conjoint clinical conferences are conducted in rotation by the departments of medicine, surgery, pediatrics, obstetrics and psychiatry.

Each student has a four week externship in psychiatry. This period is spent at a state psychiatric hospital where the student has an opportunity to learn from first hand experience the methods used in caring for a large number of seriously ill patients. There is opportunity to carry out complete psychiatric examinations, to practice brief psychotherapy under supervision, to participate in the administration of shock therapy, and to attend staff conferences. During this experience the student learns about the limitations of psychiatric treatment of patients with psychoses, but also gains knowledge of the possibilities for rehabilitation. He studies the effects of physiotherapy, occupational therapy and recreational therapy. He obtains an appreciation of the interaction of patients on each other and the influence of various members of the staff on the treatment program. By living on the grounds he experiences the social milieu of a large mental hospital.

SUMMARY

In our teaching program throughout the medical school at the University of Washington a prime objective is the correlation of the various disciplines in medicine, including psychiatry. In the basic sciences, there is integration of psychobiology with anatomy and physiology and of psychopathology with general pathology. In the conjoint course in history taking and laboratory and physical diagnosis, the student is taught to consider personality and social factors in taking a history on all patients and the needs and methods of obtaining a more complete mental examination in indicated cases. Not only is psychiatry taught at the same time as other courses with which it may be

coordinated, but it is integrated in so far as is possible with the content of these courses. In teaching child psychiatry, for example, the common aspects of child behavior, as they pertain to general practice and pediatrics, are emphasized. Similarly, the approach in psychosomatic medicine is toward understanding emotional factors as they may influence illness and the influence of illness on personality adjustment. Conjoint clinical conferences with widespread participation by faculty members bring together various specialists in a lively interchange of ideas and serve to coordinate teaching and minimize departmental barriers.

The accumulation of scientific knowledge about psychiatry has given us a sounder basis for our teaching. The old family physician often may have done an excellent job by applying common sense to his knowledge of the community and the individual in helping his patients. However, we are now in a position to give the student established data about the total functioning of the human being so that he will become a better practitioner. Furthermore, with the increase in specialization, the movement of people from rural to urban communities, and the impossibility of most physicians knowing their patients through intimate contact, there is even greater need to give the student a theoretical background in psychiatry which he can apply in carrying out effective treatment.

There is constant need to improve our teaching methods so that the time devoted to psychiatry is utilized to the greatest advantage in giving the student the best possible orientation in comprehensive medicine. Teachers of psychiatry need to compare their programs, criticize their curricula and that of others and be alert to constructive changes.

Thoughts on Medical Education by a General Practitioner*

D. G. MILLER, JR.
Morgantown, Kentucky

In a discussion of medical education at a meeting of the Southern Medical Association several years ago, Father Schwitalla said that the only person who knows what has been taught in a medical school during any four year period is the graduating senior, who is in no position to judge whether or not he has been well and adequately taught. Since I began to practice, I have had associates who are recent graduates of the better medical schools, and I have helped some young men to become established in practice. Through these years it has become more apparent to me that there are very serious defects in the training of physicians, especially if they are to become general practitioners. All of these defects are not present in the graduates from every medical school, nor in the members of each class in any medical school as the curriculum is constantly being revised in an effort to meet present day conditions.

The views I am expressing are personal. They do not represent the official views of the Academy of General Practice, the Kentucky State Medical Association or the University of Louisville, although I have been active in all these organizations on behalf of the general practitioners and I also teach a course in rural medicine and general practice at the University of Louisville. To present a paper such as this allows me to express some of my opinions that will give rise to violent disagreement by many. But, I would like to remind you, that less than five years ago the possibility was considered preposterous that courses in rural medicine and general practice would be taught in any medical school, that there would be internships and residencies in general practice or that there might be such an organization as the Academy of General Practice. While I am fully aware that I do not know of every attempt to meet the problem of training more and better general practitioners, particularly of individuals who will go to rural areas, I am familiar with much that has been done along this line during the last ten years. I acknowledge freely that I have often borrowed ideas from other men without now being able to give the original source of my information.

We will nearly all agree that the education of physicians takes too many years, and that most men are between 25 and 30 years of age before they are financially able to support themselves and a family. For this reason, any proposal to add another year, or even two years, to the curriculum meets with violent opposition. Indeed, the dean of one medical school, a graduate of a Canadian school, which has a six year curriculum, states that he can not see any advantage in the longer training period so far as he is concerned.

*Read at the Annual Meeting of the Tennessee State Medical Association, held in Chattanooga, Tennessee, April 18, 1949.

It is my proposal that the education of the future physician should begin at the completion of junior high school. The condition of our secondary schools is a matter of great concern in the United States. The curriculum of many senior high schools should be so strengthened that the students who will be directed into a scientific course will be assured of a firm foundation in mathematics and science. There are many four year high schools that give only one year of algebra and geometry, and do not teach any biology, chemistry, or physics, but their graduates are sent to college to compete in premedical classes with boys and girls who have had excellent high school mathematics and science courses. A number of our high schools are so deficient in their training in fundamentals, such as mathematics, spelling and English composition, that some colleges are compelled to give entrance examinations and to require a year or more of precollege studies between high school and the usual college courses. It is quite certain that a secondary school which trains its pupils so poorly is a liability rather than an asset in the education of potential physicians. I am certain that revision of our high school courses can and will remedy this deficiency in basic training of the student who is to take medical or any graduate training requiring mathematics and science as a basis. I am aware that many high school students who profess an interest in medicine or in one of the allied sciences will never reach the level of graduate training, but we could begin with these high school students to lay sound foundations for college and later graduate training so as to save much time in later years for additional clinical training without the necessity for increasing the total number of years in school.

Aptitude tests of well established merit may be used to help to determine the capabilities of the student and to direct him into the proper courses of study. These aptitude tests, together with the standard tests for determining the intelligence quotient, will help to prevent errors in the selection of students who are potential physicians and to eliminate those who are inclined toward medicine because of fancied glamour, mistaken ideas of the social or financial standing of physicians or who are being pushed into medical training by doting parents. Use of aptitude tests and proper vocational guidance will help to direct students who are interested in medical science but who are not mentally, psychologically, or emotionally fitted to practice medicine into related channels, such as medical research, biochemistry, nursing, or medical technology.

In the colleges in the United States today, there is wide disparity in the quality of premedical training. Acceptancies by medical schools of their first year students show that each medical school usually regards the college or university with which it is associated as training the best premedical students. For that reason, I would suggest that students be accepted tentatively by the medical school at the completion of their high school courses and that after a college entrance examination, if necessary, the student enter the university with which the medical school is associated or a college giving pre-

medical training directed by this medical school. Such a system, with some modifications, has worked well in Europe. You have only to talk to students who have attended various colleges and universities to discover how widely the quality of premedical training varies. In fact, a chemistry major with only a Bachelor's degree from one school may be almost as well trained as one with a Master's or even a Doctor's degree from another school. One school includes physical chemistry in the undergraduate curriculum while an-division of a department is constantly crying for more time on the teaching other expects the student to learn physical chemistry either in medical school or on his own during the summer before he matriculates in medicine. One school may have excellent courses in embryology and comparative anatomy while another offers neither. Yet, graduates from all of these colleges begin their actual medical training in the same class. Those with deficiencies in their high school and college training are handicapped and must make them up during the first two years of formal medical education. So well does one college train its premedical students that not one has failed in twenty-five years in any medical school. You realize, of course, that the students who are to be recommended to medical schools are selected carefully.

In my opinion, one correction to be made in our present system of educating physicians is to give, during the four years of premedical training, a portion of the preclinical work now included in the medical school curriculum. It is my contention that this would allow a great deal more time for teaching during the four years in medical school. To what this additional time should be devoted is problematical. Discussions with a dean or faculty committee of medical schools always bring forth the fact that each department and schedule. I feel that the answer to this is a thorough revision of the teaching program of our medical schools. As nearly as I can determine, there has not been an adequate and comprehensive survey of medical schools and their curricula made since 1937 to 1940. It seems to me that it would be well to resurvey all of the schools and to make extensive revisions in the curricula. There is now such a movement and I hope that it materializes into a full fledged program.

The schools, or at least the departments in each school, must find some way of surveying the material presented to the students in clinical as well as in didactic teaching. There are medical schools in which the lecture material for a course is devised by assigning the chapters of a given text to various department members. There are numerous medical schools in which the clinical material presented to the students varies with the season of the year and the weather so much that many students do not have an opportunity of coming in contact with, or examining patients suffering from the usual infectious diseases of childhood. Such physicians often graduate, complete an internship and begin to practice without knowing the difference between chickenpox and impetigo or between any of the acute exanthems and enanthems.

My suggestion to remedy these very obvious defects in the clinical teach-

ing of medical students is to follow the suggested survey of medical school curricula with the devising of a minimum score sheet for each student. This score sheet will list the number of cases of the diseases, accidents, etc., that each student must see before receiving an M.D. It is well recognized that in the South the medical student on a pediatrics service in July, August and September will see an overwhelming number of cases of diarrhea and dysentery, while the student who serves his clinical clerkship in January, February and March will see an equally large number of respiratory infections accompanied by many of the childhood diseases such as measles, chickenpox, whooping cough and scarlet fever, but few cases of dysentery. The student theoretically "on" medicine, surgery, gynecology or pediatrics, who has not seen a case of measles should be required to familiarize himself with the disease, its diagnosis, treatment and prognosis and, especially, its sequellae at whatever time such a patient is in the hospital. He should learn to see, feel and smell in making his diagnosis.

The use of such a score sheet with a minimum requirement of cases is feasible. It has long been the practice of our medical schools to require observation and participation in a minimum number of deliveries before credit is given for the completion of the course in obstetrics. It is very apparent that the mere seeing of or attending a number of deliveries does not prepare the young physician for obstetrics, nor will the average internship do so. There is little or no provision in many medical schools and hospitals for the student or intern to see and examine patients who are having abnormal deliveries. Observing twenty deliveries in which the patients are multipara, who do not require an episiotomy or perineal repair, with all deliveries in occiput anterior will not prepare a physician for delivering a persistent occiput posterior. Many young physicians begin practice without observing, much less caring for a case of breech delivery, a shoulder or an arm presentation, or having a patient with postpartum hemorrhage and controlling it. In mentioning inadequate obstetrical teaching I do not mean to single out any one department of medical instruction. I do so to illustrate common inadequacies.

In the field of clinical instruction, I strongly feel that there is too great a tendency for specialists who teach to stress what the young physician should not do and too little to teach him what he can do. This is most often due to the fact that the teacher fails to appreciate the differences between practice in the hospital and in the home or office. This may be illustrated by the recent conference initiated by the College of Radiology, when means of extending better radiological service to rural areas was discussed. The same radiologists who train high school graduates to be their technicians were unwilling to admit that it would be possible to train a medical student to make a satisfactory x-ray film. I feel that no physician should ever ask a nurse or technician to do any procedure that he cannot do himself. Such training of medical students will require more effort on the part of the teaching personnel and will result in more expense from spoiled films, etc., but it will result in the pro-

duction of better trained physicians. I feel that any physician who cannot make his own x-ray films, especially for fracture work, do his own emergency blood counts, as well as simpler chemical tests, should return to school. Yet, I do not think that the medical student and intern should be exploited. There is a great difference in requiring a student to do a procedure often enough so that he does accurate and reasonably fast work and in requiring him to do laboratory and clerical work in an effort to reduce the expenses of the hospital. At the other extreme, no procedure should be done in a teaching hospital that a student or intern cannot witness or participate in, unless there is danger to him or to the patient. Forbidding students to see many procedures in teaching hospitals should cease. I know physicians who have graduated from medical school and completed a year's internship without ever seeing a fracture reduced or a cast applied. If the student can be called at night for deliveries or to do a white count on a patient suspected of having appendicitis, he can be called to observe the reduction of a fracture and the application of the cast.

A maximum of work must be done by the student, and this varies so much in various hospitals and medical schools that it is difficult to evaluate properly this phase of the problem. I have been in hospitals that allow the student and intern to do anything that is reasonably certain not to kill the patient, and often with no supervision but that of the floor nurse. In another, the intern must be there 12 months before he is allowed to make a rectal or a vaginal examination. I think that it is advisable for the student to draw blood on a comatose or unconscious patient, and to take it to the laboratory where he can determine the blood sugar and CO_2 combining power under the supervision of technicians, for he will want this type of information some day when technical help is not available; but he should not perform every urine analysis and blood sugar determination that is necessary before a diabetic is regulated. It will be more profitable for him to learn how a diabetic's toenails should be cut, or the potential harm that a hole in a sock of a diabetic can produce.

I am very certain that a student and an intern should be taught procedures with the use of a minimum of help and equipment; that, in teaching hospitals, there should be an increased use of local, regional and topical anesthesia so that the student will observe and use under supervision procedures that will be practical in home and office practice. Personally, I prefer local or regional anesthesia to a general anesthesia even if a trained anesthetist and a gas machine are available.

For more than ten years, Bowman Gray School of Medicine has conducted a course in connection with the department of medicine in which the ordinary complaints and diseases that are met by the physician in his office and home practice are discussed and when possible these are illustrated with patients. It is my opinion that such a course should be just as much a part of the medical school curriculum as the showing of cases of tertralogy of Fallot or demonstrations in the amphitheatre of the elderly patient whose fractured femur

has been successfully nailed. It is very interesting to note that many young physicians are now graduated who have never percussed or listened to the chest of a patient with lobar pneumonia. These young men and women are totally unable to diagnose lobar pneumonia without the aid of the x-ray. Inquiry as to the reason for the very small number of cases of lobar pneumonia admitted to the wards of a large teaching hospital resulted in the information that all patients with lobar pneumonia, unless they were cyanotic when examined, or were actually moribund, were seen in the emergency room, given penicillin and a supply of sulfonamide and sent home, often without having been removed from the ambulance cot. Regardless of our lowered mortality from pneumonia, and our improvements in the diagnosis of bronchopneumonia, tracheobronchitis and atypical pneumonia, the incidence of lobar pneumonia is just as great as it was fifteen years ago. Indeed, it is greater because many patients survive after an attack that would formerly have been fatal and have many subsequent attacks. No patient whose illness has not been diagnosed should be treated with sulfonamide, penicillin, streptomycin, and aureomycin on the theory that these agents will cure most febrile diseases.

It is my firm conviction that all medical schools should follow the precedent of those schools that now have courses in general practice and rural medicine, or have as a part of their curriculum a course in which a physician who is actually engaged in general practice in a small town or rural area, discusses details necessary to beginning a practice.

Included in such courses are a portion of the facts embraced by lectures on medical jurisprudence, such as a discussion of the basic laws regarding medical practice. I think that the services of a lawyer and a doctor should be combined to teach this course, if a specialist in medical jurisprudence is not available. Emphasis should be placed on those things that specifically apply to medical practice. An example is the narcotic act, with instructions on how to obtain a license to dispense narcotics, and how to obtain narcotics for use in practice. Few physicians know when the law requires a coroner, and when a body may or may not legally be moved. Especially important are the local laws regarding quarantine and isolation.

Information about how to select an office location, the advantages and disadvantages of a home office, of solo versus group practice, and the keeping of records should be given. The best way to sterilize and pack instruments and supplies for office and home practice should be taught. The essentials of how to accumulate a good working library, and how to operate a simplified bookkeeping system that will protect the physician from loss and will also meet with the approval of the tax accountant and the Bureau of Internal Revenue should be given. There is much that should be done to teach the students about the accumulation of an estate, the type of insurance he should or should not buy; the purchase of annuities and information regarding the various types of liability insurance that will give to him and his employees the greatest protection for the least money.

Somewhere in the young physician's education, we must find a place to discuss ethics, not only the code of ethics of the American Medical Association, or his respective State Medical Society, but the finer points of behavior toward his patients and fellow physicians that are embraced by the Golden Rule. Emphasis should be placed on the duties of a physician as a citizen. The medical student must understand that leadership in all civic matters that pertain to public health, nutrition and the general welfare of his patients must come from the doctor.

It seems to me that many of the practical aspects of practice that I have attempted to emphasize could be imparted to the young physician with a minimum of difficulty by placing him with a carefully selected preceptor. There are a number of experiments with preceptors being carried out at the present time. The most satisfactory method that has been used thus far is to place the student, who has completed his third year, with a good general practitioner who is willing to spare some time for teaching the student, but who does not expect to make a drudge or a laboratory assistant out of the medical student. In the state in which this was tried last summer, nearly every student in the third year class has asked for an opportunity to serve under a preceptor during the coming summer. These students do not receive any remuneration, nor does the preceptor. The preceptor furnishes the student board and room, usually in his own home, asks that the student do not perform any duties for which the preceptor will be paid, devotes from six to eight weeks to teaching the spirit of medicine and the practical aspects of a practice, and makes no attempt to demonstrate rare and unusual pathological conditions.

The education of the general practitioner requires an internship and/or residency. Here, again, there is wide divergence of opinion, but of all of the plans that I have heard discussed during the past five years, the best is the one developed at the University of Rochester, in the Strong Memorial Hospital, where the first year of training is a straight medical internship with adequate psychiatry and psychobiological training, and the second year is divided among private hospitals in the Rochester area so that the student receives four months each of intense training in pediatrics at one hospital, obstetrics at another, and surgery, especially industrial and traumatic, at a third. These private hospitals would not have interns, at least of high caliber, if it were not for this plan, while the rotation between hospitals rendering specialized services gives the intern, or resident a much broader experience. There are now more applications for the two year residencies than there are places available.

A number of medical schools feel that the duty of the school does not cease with the awarding of a degree. For example, the University of Kansas has enlarged the hospital and teaching facilities so that training in the hospital in new procedures or refresher courses can be offered for all of their physicians; each graduate coming back to the hospital for a period of residence at

least once every five years. Some states are experimenting with the idea of furnishing locum tenens for the general practitioners who wish to obtain postgraduate training. Other states pay the physician a per diem fee to attend refresher courses. All of these plans, together with the Tennessee plan of taking postgraduate training to the physician by "circuit riders," are being studied closely and are helping to produce more and better trained general practitioners. I have purposely avoided discussing many things which are entirely experimental and the value of which is problematical, but I have attempted to outline changes that I feel, if introduced generally into secondary, college and graduate educational systems, will result in the production of more and better trained physicians, especially general practitioners. No medical schools or states have all of these suggestions in operation, but each idea that I have advanced is working satisfactorily in one or more places and I feel that with study and care our system of medical education can and will be changed so as to train more and better general practitioners.

The History of Writing

Many peoples believe their language or system of writing to be of divine origin. The name of the Sanskrit alphabet is "Devanagari," which means "pertaining to the city of the gods." "Hieroglyphic," used by the ancient Egyptians for their formal documents, carved in stone, means "sacred stone writing" (the Egyptians also had the hieratic and demotic scripts, more generally used on papyrus). They believed that writing had been devised by Thoth, god of wisdom, and the Egyptian syrians had a legend to the effect that the cuneiform characters were given to man by the god Nebo, who held sway over human destiny. Cuneiform was produced by pressing wedges into wet clay tables (the name means "wedge-shaped"); it was used by the Sumerians, Assyrians, Babylonians, Persians and other peoples of the Mesopotamian region from about 4000 B.C. to the time of Christ. The Mayas attributed writing to their most important deity, Itzamna. The lost prehistoric writing of Japan was styled kami no moji or "divine characters." (The Story of Language. Pei, Mario: J. B. Lippincott Company, Philadelphia, 1950.)

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U.S. Army Training Programs

A drastic cut in intern and residency programs to be effected without endangering professional standards in Medical Department operation has been announced by Major General Raymond W. Bliss, Army Surgeon General. The reduction in intern and residency programs has no bearing on the recent closing of military hospitals but grows out of a long study of the Army's personnel needs. The original graduate program was established with the assistance of the American Medical Association and other medical advisory groups with the goal of training 30 per cent of the Army Medical Corps as specialists. This quota was the same as that of the British Army and comparable to the American medical profession as a whole.

Immediately after the close of the war, with the release of the many clinical specialists who were temporary officers, the Medical Department had only a handful of qualified Regular Army officers remaining. Since this number was far too small to meet requirements, an extensive graduate training program was necessary. With the initial phase of this program substantially completed, it is now possible to reduce the numbers in training.

Fine professional training will continue to be available in the Army Medical Department. There will still be opportunities for first year residences in military hospitals to fill normal attrition. There will continue to be spaces in second and third year residency training for those students found best qualified by the residency selection board. Residents scheduled for temporary overseas duty will return to their residencies. In addition, the training programs now maintained at all hospitals for their assigned personnel will continue to afford excellent professional training for all medical officers.

The professional training programs involved include civilian and military internships and residencies. Training in the civilian programs is accomplished at civilian institutions with a commitment for military service following completion of training. In the military programs, students receive their training in recognized Army general hospital teaching centers.

The following reductions will be effected: *Civilian internships*: A reduction from 300 to 200 by July 1, 1950. *Civilian residencies*: No new residents have been accepted since January 1, 1950, and the program will close by attrition. *Military internships*: A reduction from 199 to 150 by July 1, 1951. *Military residencies*: A reduction of almost 50 per cent or a total of 245 by July 1, 1951, including a recent slash of 131 residencies, another 36 by July 1, 1950 and an additional 66 by July 1, 1951.

A sizable reduction in the military residency program has been made possible by comparing actual requirements in each medical specialty with the number actually on duty or expected to complete residency training. The resultant quotas recognize both the importance of the Army Medical Department having an adequate supply of specialists to meet its needs and the undesirability of overspecialization.

As a result of this analysis, it will be possible to reduce spaces in urology, anesthesiology, general surgery, orthopedic surgery, ophthalmology, otolaryngology, dermatology, medicine, pathology, radiology, plastic surgery and physical medicine. Increased spaces will be provided for psychiatry and clinical medicine (general practice).

The resident selection committee in

the Surgeon General's Office will continue to select residents for one year appointments and to advance those who are best qualified. General Bliss indicated that the streamlining of the residency program might make the eventual consolidation of teaching centers possible with all residency training conducted in centers with the best facilities, clinical material and professional supervision.

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The Borden Award

The JOURNAL has repeatedly published information concerning the Borden Award—$1,000 in cash and a Gold Medal—offered by the Borden Foundation through the cooperation of the Association of American Medical Colleges. For the past three years, the award has been given to men selected by the Committee on Borden Award of the Association as having done outstanding work in their respective fields of activity. In 1947, various individuals connected with medical schools made 31 nominations. Since then, the number of nominations has decreased considerably. Up to this time, only one nomination has been made (but not completed to meet the requirements of the Committee). Is this due to a lack of interest, or are those who can and should make nominations forgetting the existence of this award?

It is possible that there exists a misunderstanding as to the making of nominations. For example, the fact that a nominee did not receive the award is not a reason for not nominating him again for consideration the following year. Only one nominee can receive the award, but all unsuccessful nominees can again be placed in nomination for the following year's award. What has become of the 30 nominees who failed to receive the award in 1947? Have they ceased to make valuable contributions to medical knowledge? Or, is the belief prevalent that having once been nominated and failing to receive the award precludes being nominated again? Or, have those individuals who are in a position to make a nomination lost interest in this activity of the Association because their nominee was not chosen for the award?

The members of the Association and their personnel should be aware that having been chosen recipient of this award is an honor for the school as well as for the nominee. The Borden Foundation could have, on its own initiative, selected a group of men outside of the Association to pass on the work of men doing research in the field of medicine, thus not bringing the Association into the picture despite the fact that its interest in research is, no doubt, greater than that of any other group or organization. It goes without saying, that much worthwhile research is being done by members of the faculties of medical schools and that some of it should be worthy of being considered for the Borden Award.

Nominations should be sent to the Secretary of the Association. The details have been published. Nominations to be considered for the 1950 award must be made at once. Unless they are made now, there cannot be a bestowal of the award for 1950.

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The Mailing List of the Journal

In order that every one who should receive the JOURNAL, the mailing list must be up to date. On the whole, that is a difficult chore, although every effort is made by the Editor to note changes in faculties either by resignation or death or a new appointment. About 75 medical journals are received and consulted every month for changes in faculties. And, once every two years, sometimes every year, the entire list is sent out for revision by member colleges. This is an arduous and an expensive job. Changes to be made are costly. Removal of name plates and addition of new plates are subject to charge, not an inconsiderable one taking the list as a whole.

It would be a great help if colleges were to include in their news items specific requests for changes in the mailing list. The editor makes every effort to make such changes as are called for by news items, but inasmuch as not all colleges send in news items, it can be sur-

mised that it is difficult to keep the list up to date. Not always is the death of a recipient of the JOURNAL noted somewhere, either in a news item or in a medical journal. Hence, that fact is not known by the Editor and the JOURNAL continues to be sent to the address of the deceased. And, if no one cancels this listing, then, what becomes of that particular JOURNAL? Or, if anyone is no longer entitled to receive the JOURNAL because he is no longer of a medical faculty—or for a number of other reasons—should his name not be taken off the list?

This, then, is a request for much needed help. It is recognized that the administrator of a medical school has many important things to do. Perhaps, the least of these is helping to keep the mailing list alive, but inasmuch as the JOURNAL is recognized as being a highly worth while publication, in fact, the only one giving coverage of all of medical education, it is important that it fulfill its function but without wasting a single copy through misdirection. The list now contains almost 5,000 names. Perhaps some names should be deleted and some names should be added. Only by receiving notice can this be done.

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Physicians Training Against Atomic Warfare

A nation-wide program of medical preparedness against atomic warfare was launched at the University of Rochester School of Medicine, March 27. About 30 selected physicians from seven states took part in an intensive, week-long civilian defense course at the university's atomic energy project, in which all phases of atomic injuries and treatment were covered.

The nationwide project was organized by the National Security and Resources Board in cooperation with the Atomic Energy Commission.

A similar program was conducted at Johns Hopkins University School of Medicine and other courses will be given later at the medical school of the University of California at Los Angeles, the University of Alabama, Western Reserve University, the University of Utah and at the Argonne National Laboratory. Physicians chosen to participate will serve as a nucleus of trained physician teachers to direct training and organization of doctors, nurses, dentists and allied professions in their respective states. Each state will send qualified representatives of teachers in approved medical schools, physicians from each state health department, from osteopathic colleges, from the largest association of physicians and from cities having a population of 100,000 or more which are at least 75 miles from the nearest accredited medical school The latter representatives will set up defense programs in their own cities.

Subjects covered in the training program include the biologic, pathologic and genetic effects of radiation; the medical aspects of atomic explosions, mechanical and thermal injuries, radiation detection devices and their use, radiation therapy, practical considerations in dealing with an atomic bomb catastrophe and psychologic factors such as mass hysteria resulting from atomic disasters.

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Initial Report on Applicants For 1950 Freshman Class

Applicant cards indicating the action which the medical schools have taken on their applicants for the 1950 freshman class are being received by the Association daily. As of April 11, a total of 23,985 cards had been received, reporting 5,843 acceptances and 18,142 not accepted. It should be borne in mind that these figures represent *applications*, not applicants. Since many students apply to more than one medical school, the nummer of individual applicants is considerably less than the number of applicants. Seven hundred and twelve of the accepted applications were subsequently reported withdrawn (presumably because of acceptance elsewhere) making the total number of active acceptances reported to the AAMC at the time of writing 5,131.

These figures are based on incomplete reports from 69 medical schools. It is hoped that the 10 medical schools which so far have not sent in any applicant

cards will report their accepted candidates as soon as action is taken and that all medical schools will complete the mailing of the remaining applicant cards without delay. Through the use of machine techniques, the Association hopes to release statistics on the 1950 applicants considerably earlier than has been done in the past.

The procedure, started last year, of periodically preparing lists of accepted applicants for distribution to the medical schools has been continued. This year the lists were made cumulative and all but a few medical schools report that they find the lists of value in their admissions program. J. N. H.

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Internships and Residencies

The *Journal of the American Medical Association,* April 15, publishes data bearing on internships and residencies accumulated by the Council on Medical Education and Hospitals. The report shows that there are now 799 hospitals approved for intern training. They offer a total of 9,398 internships, an increase of 274 over the number available last year. The report points out that there is a trend toward increased demand for intern service in hospitals which are approved, and cites a disproportion in increase in the number of positions available this year as compared with the total number of hospitals approved. Veterans Administration hospitals, approved for intern training are included in the list.

The number of approved residencies has reached a total of 18,669, an increase of 8 per cent over the number approved last year. Significant increases are reported in the following divisions: anesthesiology, internal medicine, neurologic surgery, neurology, obstetrics-gynecology, pediatrics, psychiatry and radiology. In 1949, there were 1,179 positions vacant in approved residency programs. The report lists 32 hospitals which have developed acceptable programs for residency training. Some of these residencies are offered in teaching hospitals, under support of a medical school.

These figures for both internships and residencies deserve serious thinking. There is a great disproportion between the number of graduates for each year and the number of approved internships. It brings up the old question of whether some hospitals have too many interns and whether some hospitals should have no interns at all. The disproportion can be met by employing house officers—graduates who have served an internship. Internships of 18 months and 2 years duration also reduce the number available each year. The problem is becoming more serious every year. There is not any evidence to lead one to believe that a sufficiently large number of graduates will ever be available to fill the available internships.

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Courses Planned for Physicians in Medical Aspects of Atomic Disaster

Dr. John Masterson, President of the Medical Society of the State of New York and Dr. Herman E. Hilleboe, State Commissioner of Health, called a meeting March 17 of the deans of the nine medical schools of the State to work out plans for postgraduate education of physicians in the medical aspects of atomic explosion. The meeting was for the purpose of defining the responsibilities of the medical schools, the state and county medical societies, and the state and local health departments in postgraduate instruction for all general practitioners in the medical aspects of atomic warfare.

It was agreed that the medical schools would arrange for the courses of study and the selection of instructors in consultation with the state medical society and the state and city health departments. The medical society would assume leadership in mobilizing the doctors in every district in the state to attend the postgraduate meetings. The health departments would lend financial aid to pay for training of instructors and payment of lecturers and in addition would use the regional, county, city and district health officers to assist in local arrangements.

College News

University of Texas Medical Branch

The Texas State Hospital Board has established a center for the training of cerebral palsy children in Galveston. This has been made possible through an offer made by W. L. Moody, Jr., Galveston, of a recently erected building arranged to accommodate 80 patients with staff and costing $300,000. Mr. Moody has given further gifts to assist in furnishing the building. Plans are being made for consultation services to be rendered by the members of the staff of the Medical Branch, and special facilities will be provided for teaching and research in connection with the staff and students.

A special postgraduate conference in obstetrics and gynecology was held April 10th. This course was arranged by the Department of Obstetrics and Gynecology under the direction of Dr. Willard R. Cooke, with the cooperation of the Maternal and Child Health Division of the Texas State Health Department.

Dr. T. S. Toosy, professor of anatomy at the King Edward Medical College, Lahore, Pakistan, visited the Medical Branch recently to study methods of instruction in neuroanatomy and tissue culture. Dr. Toosy is making a study at the request of the Pakistan government of methods of medical teaching in order to assist in the planning of medical schools for Pakistan.

The Texas State Board of Health has granted $300,000 to match funds provided by the late Mrs. Rosa Zeigler for the purpose of constructing and equipping a special hospital for tuberculosis patients at the Medical Branch. The new building will have a capacity of 72 beds, and will be arranged to include a special clinic for diseases of the chest.

Dr. Olaf Larsell, professor of anatomy in the University of Oregon School of Medicine, gave a special lecture on the development of the cerebelum April 6. The lecture was arranged by the Sigma Xi Society.

Dr. Sam Clark, professor of anatomy at Vanderbilt University Medical School, was a guest speaker April 6. He spoke on "The Life of the Mind."

Dr. I. Costero, neuropathologist of the Cardiology Institute, Mexico City, will offer a series of special conferences during April and May on brain tumors. Dr. Costero has been appointed Visiting Professor of Neuropathology and will spend one month each year at the Medical Branch to offer special instruction in neuropathology.

Dr. Charles Lumsden of the department of anatomy of the University of Aberdeen, Scotland, is spending two months in special work at the Tissue Culture Laboratory with Dr. Charles M. Pomerat, Director of the Laboratory. Dr. Lumsden is visiting in the United States under the auspices of the Rockefeller Foundation.

The Medical Branch Chapter of the Alpha Kappa Kappa Medical Fraternity has established a lectureship to be given annually by some distinguished medical contributor. The lectureship has been established jointly by the Baylor Medical College Chapter of the Fraternity in Houston and the Galveston Chapter. The first speaker on the new Lectureship will be Dr. Andrew C. Ivy, Vice-President of the University of Illinois Professional Colleges. Doctor Ivy will speak in Houston at Baylor, May 16, and at the Medical Branch, May 17.

Professor Linus C. Pauling, Director of the Gates and Crellin Chemical Laboratories of the California Institute of Technology will speak at the Medical Branch, May 2nd. Professor Pauling will discuss some of his recent studies in the chemistry of immunity.

Dr. V. Korenchevsky, distinguished worker on fundamental problems relating to cancer, will visit the Medical Branch during the first two weeks in May for the purpose of conferring with the cancer research study group. Dr. Korenchevsky will participate in a special series

of seminars which are being arranged by the Department of Pathology. Prof. Wendell H. Griffith, Chairman of the Department of Biochemistry and Nutrition of the Medical Branch, will give the Thirty-third Mellon Lecture at the University of Pittsburgh School of Medicine on May 5th.

The annual Graduation Exercises of the Medical Branch will be held June 2nd. The speaker for the occasion will be Dr. William M. Gambrell of Austin, President-Elect of the Texas State Medical Society.

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Woman's Medical College

Dr. Richard H. Shryock lectured on "Women in American Medicine," April 14, at the College of Physicians. This is the third lecture in the Kate Hurd Mead Series, made possible by a bequest of $10,000 to the College by Dr. Kate Hurd Mead (class of 1888) and a like amount from the estate of her husband, William Edward Mead, deceased, the annual income of which is to be used toward a lectureship on the history of medicine. Dr. Shryock is Wm. H. Welch Professor of the History of Medicine at Johns Hopkins School of Medicine.

Dr. Pablo Purriel, Professor of Clinical Medicine at the University of Uruguay and his wife, Dr. Caorsi Purriel, one of the few women physicians in her native country, were guests at the College for two weeks in March, studying new American teaching methods and medical techniques.

The College, to complete the first half-million dollars of its Expansion Fund, is conducting a campaign to raise the balance of $150,000 by May 1. When this goal is reached two projects will be undertaken: (1) The construction of a new Nursing School and Residence for interns, residents and nurses; (2) the converson of the Hospital's fifth floor to provide 42 additional beds for convalescent and longterm care.

The College will receive an unrestricted legacy of $500 from the Estate of Dr. May F. Sibley Lee, deceased, who graduated from the College in 1884.

The Department of Oncology announced guest lecturers at its April and May conferences as follows: April 28: Dr. Philip Custer, on "Hodgkin's Disease and the Lymphomas"; May 2: Dr. Theodore R. Miller, on "Moles"; May 19: Dr. Philip Gross, on "Oral Tumors."

Two days of celebration, March 10 and 11, marked the 100th Anniversary of the Founding of the Woman's Medical College, the first medical college for women. On March 11, the actual founding date, a program was held at the College attended by 350 students, alumnae, faculty, sponsors and friends, at which the beginning of the second century was officially declared by Dean Marion Fay. The speaker was Dr. Gulielma Fell Alsop, graduate of the class of 1908, and author of the new History of the College to be published in June. Two faculty members, both Alumnae—Dr. Jean Crump, professor of pediatrics in charge of allergy, and Dr. Ann Gray Taylor, professor of obstetrics—were given citations for their twenty-five years of service as teachers.

Research grants made by the U.S. Public Health Service: To Dr. Harold L. Israel, assistant professor of medicine, $900 from the National Cancer Institute, for study on "Endocrinological Study of Patients with Sarcoidosis." To Drs. Joseph T. Freeman, associate in medicine, and Roberta Hafkesbring, professor of physiology, $1,500 from the National Institutes of Health for two projects: (1) Determination of ascorbic acid content of gastric juice, sputum, urine and blood in patients with known organic G.-I. disease; (2) similar determinations in normals before and after vitamin C saturation. To Dr. William G. Leaman, Jr., professor of medicine, $14,000 from the National Heart Institute for cardiovascular teaching grant-in-aid. To Dr. Mildred C. J. Pfeiffer, Director, Department of Oncology, and assistant clinical professor of medicine, $25,000 from the National Cancer Institute, extension of cancer training grant.

The College is offering a three-year residency in combined obstetrics and gynecology, to be allocated between these two services. In addition to that three years, three months in general pathology

is required. If the individual is interested in completing the fourth year, the three months in pathology would be lengthened to six months, and the resident would be offered three months in general surgery and three months in combined urology and anesthesiology.

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University of Arkansas School of Medicine

A gift of $500,000 from the William Buchanan Foundation, of Dallas, Texas, will provide a pediatric floor in the new medical center, to be known as the William Buchanan Pavilion for Children. This grant, with matching federal funds, will increase the bed capacity of the new hospital from 400 to 500 beds. In addition to the 500 beds, there will be provided a rapid treatment unit for neuropsychiatric patients. The number of beds for this unit has not yet been determined. Plans for the proposed new hospital and medical school building are being drawn and construction will commence before the end of 1950. It is expected that other units will be constructed and occupied simultaneously with the building of the hospital and school.

A grant of $3,000 has been received from Hoffman-LaRoche, Inc. for the study of anticurara compounds under the direction of Dr. Lloyd D. Seager, head of the department of physiology and pharmacology, and Dr. E. L. Rushia, head of the department of anesthesiology. Abbott Laboratories has granted $1,200 for the study of synergism of trypanocidal drugs, which investigative work will be carried on by Dr. Seager.

The U. S. Public Health Service has given the department of radiology a grant of $12,000, to be used for radiologic cancer control. The principal investigator in this field is Dr. I. Meschan, head of the department.

A grant of $635 from the Schering Corporation supported a color plate publication of a rare tumor in a one year old child. Dr. H. N. Marvin, of the department of anatomy, and Dr. Vida H. Gordon, of the department of pediatrics, were the recipients of this grant.

Dr. John S. Poe, formerly connected with Columbia University College of Physicians and Surgeons, has been appointed professor of neuropsychiatry and head of the department, effective May 1, 1950; and Dr. H. Lee Hall, formerly associated with the Long Island College of Medicine, has been appointed associate professor of neuropsychiatry, effective July 1, 1950.

Dr. John R. Totter, associate professor of biochemistry, has been granted a leave of absence of five months, beginning March 20, to participate in the research program at the Oak Ridge Institute of Nuclear Studies, Biology Division.

A postgraduate course in pediatrics was held March 15 and 16, 1950. Among the guest speakers were Dr. Joseph Stokes, Jr., of the University of Pennsylvania and Dr. George Piness, of the University of Southern California.

Under the joint sponsorship of the Arkansas Medical Society, the State Department of Health and the University of Arkansas, a program of postgraduate courses in obstetrics and gynecology was inaugurated at the School of Medicine. The first of the series was held March 27, 28 and 29, 1950, and similar courses will be repeated from four to six times a year. The course will include ward rounds, clinics, conferences, lectures and demonstrations. Guest speakers participating in the first program were: Dr. Phil Schreier, of Memphis; Dr. Curtis Lund, of New Orleans, and Dr. William F. Mengert, of Dallas.

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New York University–Bellevue Medical Center

Affiliation has been effected between the Vassar Brothers Hospital in Poughkeepsie, New York, and the Medical Center. The affiliation is the tenth which the Medical Center has established with hospitals located within a 100 mile radius of New York City. The Regional Hospital Plan is a part of the teaching program of the Center's Post-Graduate Medical School and is designed to bring to practicing physicians in outlying nonteaching hospitals the advantages of a

working relationship with a university medical center, thus improving the quality of medical care in the communities served by the hospitals affiliated with the plan. One or more members of the Vassar Brothers Hospital intern staff will be given the opportunity to take a full year's resident training at the Center, while others will be eligible to take shorter, part time courses. Under the Regional Plan, these physicians are obligated to return to their hospital for at least one year following completion of the course.

Dr. George Widmer Thorn, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School, gave the annual John Wyckoff Lectures for 1950.

Winthrop Rockefeller, chairman of the Board of Trustees, was the principal speaker at the annual Alumni Dinner held April 15. Mr. Rockefeller spoke on the subject, "The Role of the New York University-Bellevue Medical Center in the Community."

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University of Illinois
College of Medicine

Dr. Harry F. Dowling of Washington, D.C., has been appointed professor and head of the newly established department of preventive medicine. The University plans to initiate several new courses and research investigations in the field of infectious diseases and the sociologic aspects of medicine to supplement its present program. Courses in preventive medicine will be offered to third and fourth year medical students. The social aspects of medicine will be emphasized, particularly the relationship of the patient to his environment.

The College of Medicine also plans to establish a coordinated program of graduate education in hospitals throughout the state. This program will include the rotation or inter-changing of physicians in resident training, and more extensive participation by the UI medical faculty in the postgraduate instruction of hospital staff members.

Dr. Dowling's field of research has been concerned primarily with pneumonia, meningitis and the toxicity of sulfonamides and antibiotics. He is the author of a book entitled, "The Acute Bacterial Disease: Their Diagnosis and Treatment," and has written numerous scientific articles.

He is a trustee of the Blue Shield medical care plan sponsored by the Medical Society of the District of Columbia, and has been active in studying plans for prepaid medical care.

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Duke University School of Medicine

A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, will be offered July 3-July 29, 1950. The course is designed to insure a working knowledge of the human pathogenic fungi.

Emphasis will be placed on the practical aspects of the laboratory as an aid in helping establish a diagnosis of fungus infection. Methods of collecting materials in the clinic for study and culture will be stressed. An opportunity to study pathologic material, gross and microscopic, will be given those whose previous training would allow them to obtain the greatest benefit from a study of such material.

The number of applicants for the course will be limited and the applications will be considered in the order in which they are received. An attempt will be made to select students on the basis of their previous training and their stated need for this type of work.

A fee of $50.00 will be charged for this course, upon the completion of which a suitable certificate will be awarded. Direct inquiries to Dr. Norman F. Conant, Professor of Mycology, Duke University School of Medicine, Durham, N. C.

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College of Medical Evangelists

With a reorganization of clinical services of the Loma Linda Sanitarium and Hospital, teaching of preclinical medical students will be augmented. The services are being organized on a specialty practice basis to give undergraduates and interns better training as well as to make possible approved residency training in

the major clinical fields. Dr. John E. Peterson has been appointed chief of the medical service and Dr. T. I. Zirkle head of the surgical service.

The School of Tropical and Preventive Medicine of the C.M.E. announces a second course to be offered by the Ministry of Public Health of Mexico to students of the College. The course is a practical field course in which students first hear lectures from authorities in their field, after which they see clinical demonstrations and get laboratory diagnosis methods shown to them. The course is the only course in which undergraduate medical students are taught as a group in a foreign country by nationals. One of the greatest advantages of the trip, is the fact that United States students become acquainted with the public health problems in a tropical country. Students also became acquainted with the work of our Government in a foreign country and became more aware of their duty as American citizens in a foreign country.

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Northwestern University
Medical School

Appointments: Dr. Theodore R. Van Dellon, assistant dean, associate professor of medicine. Dr. John A. Bigler, professor of pediatrics and head of the department.

Dr. Loyal Davis, chairman of the department of surgery, has been appointed national chairman of a campaign to raise $500,000 for the Archibald Church Library at the Medical School. The fund drive for the Medical School is part of the Centennial Campaign initiated by the University last October to secure $8,250,000 by 1951 for new buildings and equipment, teaching and research on both the Evanston and Chicago campuses. Additional members of the Medical School Centennial Committee include the following: Dr. Karl A. Meyer, medical director of Cook County institutions; Dr. Richard H. Young, dean of the Medical School; Dr. Frank W. Jones, Jr., Northwestern graduate; and four members of the Medical faculty, Dr. Barry J. Anson, professor of anatomy; Dr. Howard B. Carroll, assistant professor of medicine; Dr. Arthur R. Colwell, associate professor of medicine; and Dr. John Martin, associate professor of surgery.

Dr. Walter G. Maddock has been appointed Edward G. Elcock Professor of Surgery.

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State University of Iowa
College of Medicine

Two fellowships supported by the Central Scientific Fund of the College are being offered to graduates in medicine who may contemplate academic careers in medicine. These are offered on the basis of half time teaching and half time research in any of the following departments: Anatomy, bacteriology, biochemistry, pathology, pharmacology, physiology and hygiene and public health including parasitology. Candidates may or may not have had clinical internships. Clinical residency trainees are acceptable if they wish to complement or interrupt a clinical residency program.

Graduates of any approved medical school may apply. Salary: $3,600 on a twelve-month basis for those who are unmarried; $4,000 per year for those who are married.

Applications should be submitted to the Office of the Dean, College of Medicine, State University of Iowa, Iowa City, Iowa.

Dr. Alson E. Braley, professor and chairman of the department of ophthalmology at the Post-Graduate Medical School of New York University College of Medicine, has been appointed to a similar position at Iowa. Dr. Braley succeeds Dr. Cecil S. O'Brien who retired last fall.

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Hahnemann Medical College

New Appointments: Dr. Charles M. Thompson, professor and Head of the department of gastro-enterology, succeeding Dr. Harry M. Eberhard, retired; Dr. J. Stauffer Lehman, professor and Head of the department of radiology, succeeding Dr. Jacob W. Frank, retired; Dr. Charles B. Hollis, professor and Head of

the department of otolaryngology, succeeding Dr. Joseph V. F. Clay, retired; Dr. Joseph E. Imbriglia, professor and Head of the department of clinical pathology; Dr. Randal A. Boyer, associate professor of radiology; Dr. Axel K. Olson, associate professor of surgery, in charge of the section of neurosurgery; Dr. E. C. H. Schmidt, associate professor of pathology.

Contributions: $50,000 from Mr. William Goldman, trustee, as an addition to the William Goldman Dean's Fund which is for unrestricted use for any needs of the College; $5,000 from the Commercial Solvents Corporation, representing a renewal of the grant for the study of inositol.

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Bowman Gray School of Medicine

Promotions: Dr. Robert B. Lawson, professor of pediatrics and director of the department. Dr. Leroy J. Butler will retain the title of professor of pediatrics but will be relieved of administrative duties. Dr. Eben Alexander, Jr., assistant professor of surgery in charge of neurosurgery. Dr. George E. Bradford, assistant professor of otolaryngology.

Appointments: Dr. Robert J. Andrews, visiting professor of radiology and radiologist for N. C. Baptist Hospital; Dr. James F. Martin, assistant professor of radiology; Dr. Patrick H. Tooley of London, England, visiting professor of neuropsychiatry as an exchange professor. Dr. Fleetus L. Gobble, assistant in clinical obstetrics and gynecology.

Dr. Ernest H. Yount, Jr., instructor in internal medicine, received a grant from the John and Mary R. Markle Foundation for research in degenerative and metabolic diseases.

The Beta chapter of Alpha Omega Alpha, located at Bowman Gray, presented a panel on medical education April 27. Dr. Alan Valentine, president of the University of Rochester, was chairman of the panel. Discussants were: Dr. D. B. Bryan, dean of the school of liberal arts, Wake Forest College, whose subject was "Medical Education as Preparation for the Professions;" Dr. Currier McEwen, dean of New York University Medical School, "Undergraduate Medical Education;" Dr. Robert C. Berson, assistant dean, University of Illinois College of Medicine, "Medical Education for the Specialties"; and Irving Carlyle, former president of the board of trustees of Wake Forest College, "Medical Education to Meet the Needs of the Public."

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Chicago Medical School

Appointments: Dr. Harold Elishewitz, assistant professor of parasitology; Dr. Harry F. Weisberg, research associate in pathology.

A gift of $10,000 has been received for a subsidiary scholarship from an anonymous donor. Dr. Andrew H. Ryan, associate professor of physiology and pharmacology, has been appointed assistant to the dean.

The Alpha Rho Chapter of Phi Lambda Kappa Fraternity, has established a Maurice Oppenheim Memorial Lectureship in honor of the late Dr. Maurice Oppenheim, Head of the Department of Dermatology and Syphilology. The first annual lecture will be held May 5th. Dr. Irvine H. Page, Director of Research of the Cleveland Clinic Foundation, Cleveland, will be the speaker. His subject will be "Arterial Hypertension—Its Nature and Treatment."

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The Medical College of the State of South Carolina

The National Heart Institute gave a grant of $7,810 to the department of pharmacology for continued research under the direction of Dr. R. P. Walton, professor of pharmacology with the assistance of Dr. P. C. Gazes and Mr. M. deV. Cotten.

The National Cancer Institute gave a grant of $100,000 for cancer research construction as an addition to the College building.

For the first time in its history, the College is now offering graduate courses in anatomy, biochemistry, pathology, pharmacology and physiology. Candi-

dates for the master of science and doctor of philosophy are accepted. Prerequisites are bachelor's degree in arts or science or doctor of medicine.

Dr. Gantt, former head of the Outpatient Department died in February after a long illness.

Dr. Cecil K. Drinker of Harvard Medical School delivered four lectures on the "Clinical Physiology of the Lungs."

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University of Virginia
Department of Medicine

The University has received a grant of $25,000 from the John and Mary R. Markle Foundation for a five-year period in support of a Scholarship in Medical Sciences for Dr. Charles G. Craddock, Jr. Dr. John Hamilton Allan, assistant professor of orthopedic surgery at the University of Pennsylvania Graduate School of Medicine, has been appointed professor of orthopedics and Chairman of the School of Orthopedics. Dr. Joseph F. A. McManus, associate professor of pathology at the Medical College of Alabama, has been appointed associate professor of pathology. Dr. Monroe D. Eaton, on leave of absence from the Harvard Medical School, is visiting professor of bacteriology.

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University of Chicago Division
of Biological Sciences

New members of the staff of the Institute of Radiobiology and Biophysics include Dr. C. Phillip Miller, professor of medicine, Dr. J. Garret Allen, associate professor of surgery, and Dr. Leon O. Jacobson, associate professor of medicine. These men will retain their status in their respective departments.

Dr. Raymond Lanier, Assistant Professor of Radiology, will assume the duties of Professor of Radiology and Chief of the Department at the University of Colorado on July 1, 1950.

Dr. J. W. J. Carpender has been named as the official representative of the University of Chicago at the International Congress of Radiology which will be held in London during the last week of July, 1950.

Dr. Helmut P. G. Seckel, Assistant Professor of Pediatrics, will spend from April to October at the University of Frankfurt, Germany.

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Tulane University of Louisiana
School of Medicine

The Edward G. Schlieder Educational Foundations of New Orleans has given Tulane a grant of $50,000 to establish an expanded program of research and graduate teaching in diseases of the eye. The program will be under the direction of Dr. James H. Allen, recently appointed professor of ophthalmology. He will also supervise graduate and postgraduate teaching. Dr. Allen was a member of the faculty of the State University of Iowa College of Medicine since 1930.

In July, 1949, the Schlieder Foundation gave Tulane $60,000 for the development and expansion of the School's psychiatric facilities.

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University of Wisconsin
Medical School

A federal grant of $291,000 for the heart research institute has been received. University regents approved the integration of the mental hygiene division of the State Board of Public Welfare and the Wisconsin Psychiatric Institute of the Medical School, and approved Dr. Leslie Osborn, head of the University of Buffalo psychiatry department, as director of the joint program. Dr. William F. Lorenz, present director of the Psychiatric Institute, who is within a few years of the retirement age, will continue his current functions which are related primarily to the laboratory services of the Institute.

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Western Reserve University
School of Medicine

Appointments: Dr. Gilbert J. Vosburg of Johns Hopkins University School of Medicine, professor and Head of the department of obstetrics and gynecology, succeeding Dr. Arthur H. Bill; Dr. Arthur J. Patek of Columbia University, professor of medicine.

Stanford University School of Medicine

Postgraduate courses for practicing physicians: Registration in all courses is limited. Course: General Surgery; Acute Surgical Emergencies; Surgical Anatomy; Internal Medicine; Electrocardiography; Diseases of the Chest; Pediatrics; Proctology; Fundamentals of Roentgen Diagnosis; Fractures; Obstetrics and Gynecology. Each physician may register for one morning and one afternoon course. Fee for two courses $75.00 (not covered by veterans' educational benefits). Apply to Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

A series of medical teachers was given from March 29 to April 26. These lectures were open to the public. They covered "New Drugs in Tuberulosis"; "Treatment of High Blood Pressure"; "The Common Cold" and "ACTH, the Magic Hormone."

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Medical College of Georgia

Pursuant to recommendations made by Dr. George D. Strayer of Columbia University and his associates who made a special survey of the University System of Georgia, the Board of Regents of the University System on January 18th, 1950, (1) declared the medical school a separate and independent unit within the System, (2) restored the name of Medical College of Georgia, and (3) changed the title of the head of the school from Dean to President.

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University of North Carolina School of Medicine

Dr. Henry T. Clark, Jr., medical director of Vanderbilt University Hospital, has been appointed administrator of the Division of Medical Affairs. Dr. Clark will head the new division of the university that includes five health professional schools and the hospital: the expanded four year school of medicine, schools of pharmacy, public health and dentistry and the new four year school of nursing.

University of Minnesota Medical School

A grant of almost one-half million dollars has been received from the estate of Silas McLure for medical research.

A continuation course in proctology will be presented May 22-27, 1950. Dr. George Thiele of Kansas City will be the visiting faculty member for the course. He will discuss "The Relationship of Anorectal Disease to General Medical Problems" and "Office Management of Common Proctologic Complaints."

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University of Colorado School of Medicine

The Ebaugh Foundation of the University of Colorado Medical Center presented a fund to the university to finance a yearly research fellowship in psychiatry marking the twenty-fifth anniversary of the Colorado Psychopathic Hospital and honoring Dr. Franklin G. Ebaugh, who has been director of the hospital since its inception.

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University of Cincinnati College of Medicine

Dr. Richard W. Vilter, associate professor in the department of internal medicine and assistant dean, has received a $5,000 grant for research from the National Vitamin Foundation, Inc.

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Georgetown University School of Medicine

A hypertension clinic has been set up in the University Hospital under the direction of Dr. Edward D. Freis. The clinic will be available only to the indigent or semi-indigent.

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Mayo Foundation

Dr. Kendall B. Corbin, professor of neuroanatomy in the Foundation has been appointed associate director. He succeeds Dr. Stanly W. Olson, now dean of the College of Medicine of the University of Illinois.

Jefferson Medical College

A fellowship in gynecologic endocrinology will be available in the department of obstetrics and gynecology, Jefferson Medical College and Hospital, July 1. Applicants must have had at least a one year residency or equivalent training in obstetrics and gynecology. The fellow will work under the supervision of Dr. Abraham E. Rakoff, clinical professor of obstetric and gynecologic endocrinology, and members of the endocrine division of the department. The stipend is $1,800 a year. For details address Lewis C. Scheffey, M.D., director of the Division of Gynecology, Jefferson Medical College and Hospital.

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State University of New York

Dr. Carlyle Jacobsen, Executive dean of the division of health sciences and services at the State University of Iowa, has been appointed Executive dean for Medical Education, effective June 1. He will assist President Eurich and the university's Board of Trustees in establishing policies for the university's two medical centers, the Long Island College of Medicine and the Syracuse College of Medicine.

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St. Louis University School of Medicine

Appointments: Dr. Louis L. Tureen, professor of clinical neurology and psychiatry; Dr. Thomas Hale, Executive secretary of the department of neurology and psychiatry.

Dr. J. Arthur Meyers of the University of Minnesota School of Medicine delivered the Hyman Spector lecture April 12, titled "Immunity and Tuberculosis—30 Years of Observation."

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University of Michigan Medical School

Dr. Russell N. DeJong, associate professor of neurology, has been promoted to professor and chairman of the department, succeeding Dr. Carl D. Camp, who has held the position for the past 42 years and is being retired.

University of Tennessee College of Medicine

Grants from American Cancer Society: Dr. Donald B. Zilversmit, instructor in physiology, $5,500; Dr. Lester van Middleworth, instructor in physiology, $3,800; Dr. R. H. Alden, professor of microscopic anatomy, $3,115; Dr. John L. Wood, associate professor of chemistry, $4,000.

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Albany Medical College

The National Heart Institute of the U. S. Public Health Service has renewed a research grant of $7,200 to Dr. A. V. Wolf, associate professor of physiology, for the purpose of conducting studies on the function of the kidneys.

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State University of New York College of Medicine in Syracuse

Dr. Gordon K. Moe of Ann Arbor, Michigan, has been appointed professor of physiology. At Michigan he was assistant professor of pharmacology.

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University of Utah School of Medicine

Dr. John Z. Bowers, appointed dean, will take office November 1. He will replace Dr. H. L. Marshall, who has been acting dean since Dr. Young resigned.

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Harvard University School of Medicine

Dr. Charles R. Drew, professor of surgery and head of the department since 1941, died April 1.

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Long Island College of Medicine

The new name of this School will be "State University of New York, State University Medical Center at New York, College of Medicine."

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Emory University School of Medicine

A series of four lectures on medical care in the South was sponsored by the students April 24, May 3-9-11.

General News

American Board of Nutrition

A certifying board, the American Board of Nutrition, to establish standards of qualification of persons as specialists in human nutrition and to certify persons who comply with the standards, has been established by persons and organizations interested in the practice of the science of nutrition. Those concerned with the establishment of the Board included representatives from the American Institute of Nutrition, American Medical Association, the American Public Health Association, American Society of Biological Chemists, Inc., and the Association of American Medical Colleges. Present members of the Board are Otto A. Bessey, C. A. Elvehjem, Wendell R. Griffith, C. G. King, L. A. Maynard, Fredrick J. Stare and John B. Youmans.

Requirements for admission to examination and certification are as follows: (1) Citizenship in the United States or Canada; (2) presentation of evidence of satisfactory moral and ethical standing; (3) Ph.D. in a biological science or M.D. degree from an approved school; (4) courses or training equivalent to a minimum of three semester hours in at least three of the following five subjects:—food technology, microbiology of food, human physiology, large scale food preparation and hospital dietetics; (5) three years' experience in the practical aspects of human nutrition. Qualified candidates will be considered for certification without examination until June 30, 1951.

Prescribed forms for applications, and further information may be obtained from the office of the Secretary-Treasurer, Otto A. Bessey, University of Illinois College of Medicine, 1853 W. Polk Street, Chicago 12, Illinois.

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U.S. Air Force Clinical Clerkships

The U. S. Air Force Medical Service has vacancies for 75 clinical clerkships at Air Force base hospitals for medical students who have completed the junior year. To be eligible for selection as a clerk, the student must be a member of the Volunteer or Organized Air Reserve. Students selected will enter on active duty as officers in the reserve rank they now hold, with full pay and allowances. Officers who hold aeronautical ratings will not be on flying status while on duty as clinical clerks. Point credits toward promotion and retirement in the air Force Reserve will be given for the days on duty. Assignment to duty as a clinical clerk will be for a period and not to exceed ninety days. Clinical clerks will perform preliminary physical examinations, writing of case histories and other similar duties under the supervision of Air Force medical officers. Information may be obtained from the Commanding General, Continental Air Command, Mitchel Air Force Base, New York, or from the Office of The Surgeon General, United States Air Force, Washington 25, D. C.

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American Schools of Public Health

At the annual meeting of the Association of Schools of Public Health held at the Yale Medical School, April 6-7, is was voted:

"That the Association of Schools of Public Health in line with previous testimony of its officers with respect to S-1453 and H.R.-5940 endorses the principles and objectives set forth in these Bills as currently passed or revised and urges that these Bills as now amended and after suitable adjustment of differences be passed by the Congress as a matter of urgency."

The Association includes in its membership all of the nine Schools of Public Health in the United States (California, Columbia, Harvard, Johns Hopkins, Minnesota, Michigan, North Carolina, Tulane, Yale) providing postgraduate instruction in this field.

Other important matters discussed at

the New Haven meeting were: Plans to broaden and improve courses provided by Schools of Public Health, plans for increasing facilities of state and local health agencies for effective field training; requirements of the American Medical Association Specialty Board in Preventive Medicine and Public Health and the need to simplify accreditation procedures for Schools of Public Health.

The following officers were elected to serve during 1950-51: President, Brigadier General James Stevens Simmons, USA (Ret.), Dean of the Harvard School of Public Health, Boston, Massachusetts (re-elected to serve 3rd term); Vice President, Dr. Edward Rogers, former Dean of California University School of Public Health and now Vice President of the University, Berkeley, California; Secretary, Dr. Ira Hiscock, Chairman of the University Medical School, New Haven, Connecticut.

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Brandeis University

Brandeis University, Jewish sponsored nonsectarian institution, has formulated plans for the development of a 100 acre campus, calling for the construction of fifty buildings during the next ten years, at an estimated cost of $22,715,000. The plan will be executed in two stages. The first provides for the construction of facilities for the university's Faculty of Arts and Sciences. The second calls for facilities for the university's projected professional and graduate schools. The entire expansion program is expected to be completed by 1960. The first of the new buildings will be for a group of residence facilities. At a future date, announcement will be made of plans for the housing of the professional and graduate schools, which will probably call for additional buildings at a cost of about $9,500,000.

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Rutgers Virus Research Laboratory

This laboratory is the first unit of the Rutgers Institute of Microbiology. The institute is financed by the Rutgers Research and Endowment Foundation to which Dr. Selman A. Waksman, Rutgers microbiologist and discoverer of streptomycin, has been assigned. The foundation provided $65,000 for construction. Dr. Waksman and his colleagues will begin new lines of research into antivirotics. A grant from the Kresge Foundation in the amount of $25,000 will help meet the first year operating expenses. Dr. Vincent Groupe, associate professor in the Department of Micobiology, will be chief of the new labortory.

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Grants By Markle Fund for Medical School Faculty Support

The John and Mary R. Markle Foundation has named twenty medical scientists as the third group of Scholars in Medical Science as part of a five year program to keep young doctors on teaching and research staffs of medical schools. The sum of $500,000 has been appropriated for their support, to be allotted in grants of $25,000 each at the rate of $5,000 a year to the medical schools in which they hold faculty appointments. Under the program, now in its third year, a total of forty-eight doctors will be aided with grants amounting to $1,200,000.

The Scholars were selected from a group of candidates proposed by medical schools in the United States and Canada and interviewed by regional committees appointed by the foundation. The grants are made "for support of outstanding young scientists who have chosen academic medicine in preference to practice or research in industrial laboratories. The purpose is to afford them academic and financial security to develop at their own pace."

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New York State Board of Regents

A committee of physicians and educators has been appointed by the Board to visit medical colleges and schools in Italy and to make recommendations in connection with licensing their graduates to practice medicine in New York State.

The committee will make the inspection tour at the invitation of the Italian Minister of Education. The tour will include visits to the Universities of Milan, Bologna, Pavia, Turin, Florence, Rome,

Palermo and Padua. Dr. Dominick F. Maurillo, a member of the Board of Regents, is chairman of the committee. Other members include Dr. Donald Sheehan of the New York University Medical Center and Dr. Irwin A. Conroe, assistant state commissioner of education in charge of professional education and licensure.

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Passano Foundation Award

For the second time in its history, the Directors of the Passano Foundation announce a dual award, the $5,000 cash award for 1950 going to Dr. Edward C. Kendall and Dr. Philip S. Hench of the Mayo Clinic, for their studies in clinical physiology as related to the administration of cortisone and related homones. The award will be presented at the St. Francis Hotel in San Francisco, June 28th.

The Passano Foundation, established in 1943 by the Williams & Wilkins Company, medical publishers of Baltimore, Maryland, to aid in the advancement of medical research, especially that which bears promise of clinical application, has made five previous awards. These have gone to E. J. Cohn, Harvard University, for his work on fractionation of blood; Ernest Goodpasture, Vanderbilt University, for virus culture by chick embyro method; Selman Waksman, of Rutgers University, for discovery of streptomycin; a joint award to Helen B. Taussig and Alfred Blalock of the Johns Hopkins University Medical School, for their development of the "blue baby" operation; and in 1949 to Oswald T. Avery, formerly of the Rockefeller Institute for Medical Research, for his investigations of the pneumococci and the immunological relationships.

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U.S. Public Health Service Interns

A total of 122 senior medical students who will graduate from approved medical schools in 1950 have been selected to serve internships at Public Health Service hospitals. Students selected for internships are appointed assistant surgeons in the Reserve Corps of the Public Health Service and are called to active duty on graduation. The eleven Public Health Service hospitals approved for internships by the Council on Medical Education and Hospitals of the American Medical Association are: Baltimore, Boston, Chicago, Cleveland, Detroit, Galveston, New Orleans, Norfolk, San Francisco, Seattle and Staten Island.

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The Kappa Delta Award for Research in Orthopaedic Surgery

A prize of $1,000, donated by the Kappa Delta Sorority, is awarded annually by the American Academy of Orthopaedic Surgeons for the best research done in orthopaedic surgery or a related scientific field by an individual in the United States. The second award, for 1950, will be presented at the eighteenth annual convention of the Academy in Chicago, January 31, 1951. Researchers interested in competing for this prize are requested to secure further information from Dr. R. Beverly Raney, Duke Hospital, Durham, North Carolina, Chairman of the Award Committee for 1950.

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National Board of Medical Examiners

Dr. John P. Hubbard has been appointed Associate Secretary on the executive staff of the Board. He assumed his duties on March 1, when he retired from his present position of Director of the Committee for the Improvement of Child Health of the American Academy of Pediatrics.

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University of Puerto Rico School of Medicine

Dr. Donald L. Martin, professor of preventive medicine and public health, Duke University Medical School, has been appointed dean and professor of Microbiology. The school will become operative in the Fall. A freshman class of 50 will be admitted.

Book News

The Physiological Basis of Medical Practice: A Text in Applied Physiology

By Charles Herbert Best, M.D., Professor and Head of the Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto, and Norman Burke Taylor, M.D., Professor of the History of Medicine and Medical Literature, University of Western Ontario. ed. 5. The Williams & Wilkins Company, Baltimore. 1950. Price, $11.

Revised and expanded; 100 pages of new text; many new illustrations (total, 601). New material on blood cell cycles; anemia; nutritional factors in blood formation; potassium balance in cardiac perfusion; shock; oxygen transportation; recent advances in the knowledge of renal function; muscle metabolism and the part played by vitamins; endrocrines; cerebral cortex, subcortical and intercortical connections; extent of sensory representations; electric stimulation; retinal processes; dioptric mechanisms, plus an extensive list of references (66 pages.)

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Introduction to Neuropathology

By Samuel P. Hicks, M.D., and Shields Warren, M.D., members of the Department of Pathology, Harvard Medical School. McGraw-Hill Book Company, New York. 1950. Price, $10.

Emphasizing the fundamentals of disease processes in the nervous system; introducing a new approach to the mechanisms, dynamic sequences and pathologic physiology of diseases processes in the nervous system. Many fine photographs, which actually illustrate, form a large part of the text, which, incidentally, keeps in mind the needs of the student as well as the pathologist. This is an outstanding book in a field which has been somewhat neglected.

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Lord Lister: His Life and Doctrine

By Douglas Guthrie, Edinburgh. The Williams & Wilkins Company, Baltimore. 1949. Price, $3.50.

Incorporating new data on the life of Lord Lister with a review of previously known facts. A recital of the life of a man whose influence on medicine is still prominent cannot fail to be informative as well as interesting.

Medical Gynecology

By James C. Janney, Associate Professor of Gynecology, Boston University School of Medicine. ed. 2. W. B. Saunders Company, Philadelphia. 1950. Price, $6.50.

An approach to the subject from the direction of the patient's complaints. The mechanism of symptoms is stressed not only as an aid to diagnosis but also in the formulation of treatment. The book is limited to office gynecology. Didactic lectures are correlated with clinical experience. It is strictly a student text. First, there is a review of history taking. Succeeding sections deal with patient's complaints with a listing of physical and pathological causes for each complaint. Diagnosis and treatment are discussed next, with an interpretation of special tests, the results of treatment and the "why" for these results. Additions and changes from the previous edition have been made without, however, altering the character of the work.

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Training for Childbirth

By Herbert Thoms, Professor of Obstetrics and Gynecology, Yale University School of Medicine. McGraw-Hill Book Company, New York. 1950. Price, $3.

A professional report on the details of "training for childbirth," a program that has operated at the Grace-New Haven Hospital. The program pays special attention to an educational program and increased care or "support" during labor. Classes are held for prospective as well as expectant mothers in which the physiology of pregnancy and of labor are discussed. Classes are also held for fathers and parents-to-be. Exercises are prescribed for the mother. Stress is laid on the normalcy of pregnancy and labor. Physicians as well as students will find this an interesting as well as valuable book.

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Quinidine in Disorders of the Heart

By Harry Gold, M.D., Professor of Clinical Pharmacology, Cornell University Medical College. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers. 1950. Price, $2.

Based on personal experience, reading and teaching of laboratory and clinical pharmacology to medical students. Essentially a guide for the general practitioner.

A Guide to General Medical Practice

By Martin G. Vorhaus, M.D., Attending Physician, Hospital for Joint Diseases, New York City. The Macmillan Company, New York. 1950. Price, $3.50.

Every graduate in medicine is faced by problems which crop up at the inception of medical practice. Many years have passed since anything was written to help solve these problems. This author has undertaken this task and has done an excellent job. Graduates will find the book very helpful in making a good start in practice. The change from general practice to specialization during the past fifty years and the present day trend back to the practice of general medicine. Following a short introduction dealing with general topics, part I discusses the all important item of initiating a practice, such as the first office, the development of a practice as well as location. Part II deals with the approach to the usual clinical problems; part III, to the role of adviser in family problems, such as adolescent tensions, premarital education, parent-child relationship and leisures and hobbies of later life. It is an interesting and informative presentation of facts with which every graduate should be familiar.

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A Primer of Venous Pressure

By George E. Burch, M.D., Henderson Professor of Medicine, Tulane University School of Medicine. Lea & Febiger, Philadelphia. 1950. Price, $4.

A book intended for the beginner. Certain fundamental principles concerned with the maintenance of and fluctuations in venous pressure are discussed both in normal and in disease states to illustrate how adequate appreciation of their significance may permit more intelligent analysis of clinical syndromes. Five chapters give coverage: I. Functional anatomy; II. physiologic characteristics and hemodynamic phenomena of the circulation in veins; III. measurement of venous pressure; IV. normal values of venous pressure. V. venous pressure in certain abnormal clinical states.

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A Manual of Cardiology

By Thomas J. Dry, M.B., M.S. in Medicine, Associate Professor of Medicine, University of Minnesota, Mayo Foundation. ed. 2. W. B. Saunders Company, Philadelphia. 1950. Price, $5.

Brief but concise, giving complete coverage of the subject. An excellent book for medical students and practitioners.

Histology

By Arthur Worth Ham, M.B., Professor of Anatomy, in charge of Histology, Faculties of Medicine and Dentistry, University of Toronto. J. B. Lippincott Company, Philadelphia. 1950. Price, $10.

This is not a cut and dried text. Many clinical applications are made and with a profuseness of illustrations, the author says that 90 per cent are original, the clarity of the text is assured. Ham's original work on the capillary beds affected by burns of different depths, the repair of skin and the methods by which skin grafts are vascularized is given considerable space and justly so. Part I of the text is devoted to a discussion of what histology is and how it is studied. Part II deals with cells, intercellular substances and fluids. Part III with the four primary tissues and their subdivisions. Part IV with the histology of the systems. A short bibliography is appended to each chapter. And the 445 well made illustrations add much to the value of the text.

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Diseases of the Foot

By Emil D. W. Hauser, M.D., Associate Professor of Bone & Joint Surgery, Northwestern University Medical College. ed. 2. W. B. Saunders Company, Philadelphia. 1950. Price, $7.

For the practitioner and teacher. Rewritten with addition of much new material, such as treatment of pes valgoplanus; treatment in infancy of congenital talipes equinovarus and pes valgoplanus. The chapter on infections has been revised to include the current use of antibiotics; treatment of circulatory disorders and a new method of treatment of thrombophlebitis, using anticoagulants and antibiotics.

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Practical Statistics in Health and Medical Work

By Ruth Rice Puffer, Dr. P.H., Tennessee Department of Public Health, with a forward by Hugo Muench, M.D. McGraw-Hill Book Company, Inc., New York. 1950. Price, $3.75.

Intended for health workers generally describing methods of statistical analysis.

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Urological Surgery

By Austin Ingram Dodson, M.D., Professor of Urology, Medical College of Virginia, and assisting contributors. ed. 2. The C. V. Mosby Company, St. Louis. 1950. Price, $13.50.

Rewritten and revised with the addition of new material and new illustrations.

Fundamentals of Chemistry

By Charlotte A. Francis, A.M., formerly instructor in chemistry, Teachers College, Columbia University, and Edna C. Morse, R.N., A.M., Assistant Professor of Home Economics (Chemistry), Teachers College, Columbia University. ed. 3. The Macmillan Company, New York. 1950. Price, $4.50.

For those students whose study of chemistry is directed toward attaining a better understanding of physiology, microbiology, nutrition and other phases of everyday living. Much of the old text has been rewritten and much new material has been added to bring the book in line with current knowledge.

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Textbook of Pediatrics

(Mitchell-Nelson) Edited by Waldo E. Nelson, M.D., Professor of Pediatrics, Temple University School of Medicine, with the Collaboration of Sixty-Three Contributors. Ed. 5. W. B. Saunders Company, Philadelphia. 1950. Price, $12.50.

This is an encyclopedia of pediatrics. The 1,650 pages contain all that is known in this field, contributors by masters in pediatrics. It is impossible, in the space available, to give even a birdseye view of the contents. Hundreds of illustrations and tables elucidate the text. It is safe to say that coverage of the subject is complete and up-to-date.

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Research in Medical Science

Edited by David E. Green, Ph.D., and W. Eugene Knox, M.D. The Macmillan Company, New York. 1950. Price, $6.50.

The twenty-six essays comprising the text are written by outstanding representatives in the fields of chemotherapy, therapeutics, physiology, epidemiology, microbiology, anthropology and allied sciences. They cover viruses, immunochemistry, isotopes in medicine, endocrinology in cancer research, pediatrics, hypertension, direction of surgical effort, neurology, psychiatry, etc. The intent is to clarify thinking on what constitutes medical research.

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Laboratory Manual of Microbiology

By George L. Peltier, Professor of Bacteriology, University of Nebraska, and Keith H. Lewis, formerly Assistant Professor of Bacteriology, University of Nebraska. ed. 2. The Macmillan Company, New York. 1950. Price, $2.50.

Covering 29 exercises with blank interleaved pages for student notes. The appended glossary is good.

Applied Medicine

By G. E. Baumont, F.R.C.P., Physician to the Middlesex Hospital, Brompton, England. The Blakiston Company, Philadelphia. 1950. Price, $6.

Essentially a discussion of case histories. The author draws on his experience, setting forth complete data on 74 cases of various kinds. About one-half of the cases are demonstrated at the bedside by question and answer. A few pages of "idle thoughts" give some needed information. Clinical clerks should find the book good reading. It is not only informative but also entertaining. Emphasis is laid on the symptoms experienced by the patient and how his story can be evaluated by the physician in arriving at a diagnosis.

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The Cytologic Diagnosis of Cancer

By the Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital and Affiliate of the Massachusetts General Hospital and the Department of Gynecology of Harvard Medical School. Published under the Auspices of the American Cancer Society. W. B. Saunders Company, Philadelphia. 1950. Price, $6.50.

This book is dedicated to Dr. George N. Papanicolaou. It covers all the work that has been done on the cytologic diagnosis of cancer. It is profusely but beautifully illustrated. A book which should have value for every practitioner of medicine.

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Brain and Behaviour: Induction as a Fundamental Mechanism of Neuropsychoatric Activity

By N. E. Ischlondsky, M.D., New York. The C. V. Mosby Company, St. Louis. 1949. Price, $7.

Dedicated to the future of psychiatry and psychology as integral parts of the science of brain dynamics; an experimental and clinical study with consideration of educational and mental-hygiene and general sociological implications. Two parts: Part I: Previous Research on Induction. Part II: the Author's Investigation. Illustrated.

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The American College

Edited by P. F. Valentine, San Francisco State College with the assistance of noted contributors (17). Philosophical Library, New York. 1950. Price, $10.

A report on the activities of the American College in the field of general education. Very complete.

Malariology

Edited by Mark F. Boyd and Sixty-five contributors. In Two Volumes. With a foreword by Colonel Sir Rickard Christophers. W. B. Saunders Company, Philadelphia. 1949. Price, $35.

A comprehensive survey of all aspects of this group of diseases from a global standpoint. Everything known about malaria is presented by authorities in this field. It is a complete encyclopedia on malaria. It is well illustrated and the text is supplemented by numerous tables and what must be a complete bibliography—judging by its length—on malaria. The book is comprehensive.

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Essentials of Obstetrical and Gynecological Pathology

By Robert L. Faulkner, M.D., Assistant Professor of Gynecology, and Marion Douglass, M.D., formerly Assistant Professor of Gynecology, Western Reserve University School of Medicine. ed. 2. The C. V. Mosby Company, St. Louis. 1949. Price, $8.75.

A simple and unadorned text for those who have not had a recent contact with histology and pathology. Well and profusely illustrated.

Practical Anatomy

By W. E. LeGros Clark, F.R.C.S., Professor of Anatomy, University of Oxford. The Williams & Wilkins Company, Baltimore. 1949. Price, $6.

Revised and rewritten. The main feature of this book is the improvement of the illustrations with many new ones added. It meets fully books of this type and should be helpful to medical students.

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Physiology of the Nervous System

By John F. Fulton, M.D., Sterling Professor of Physiology, Yale University. ed. 3. Oxford University Press. 1949.

Emphasizing the need for a thorough knowledge of neuro-physiology, especially for the relief of abnormal mental states.

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Antibiotics

By H. W. Florey and Associates. Two volumes. Oxford University Press, New York. 1949. Price, $29.75.

A survery of penicillin, streptomycin and other antimicrobial substances from fungi, actinomycetes, bacteria and plants. Eleven parts; 48 chapters.

McManus---Medical Diseases of the Kidney

By J. F. A. McMANUS, M.D.
Associate Professor of Pathology, The Medical College of Alabama, Birmingham
New. 176 Pages, 6½" x 10". 100 Illustrations and Frontispiece. $6.00.

Kessler---Principles and Practices of Rehabilitation

By HENRY H. KESSLER, M.D., Ph.D., F.A.C.S.
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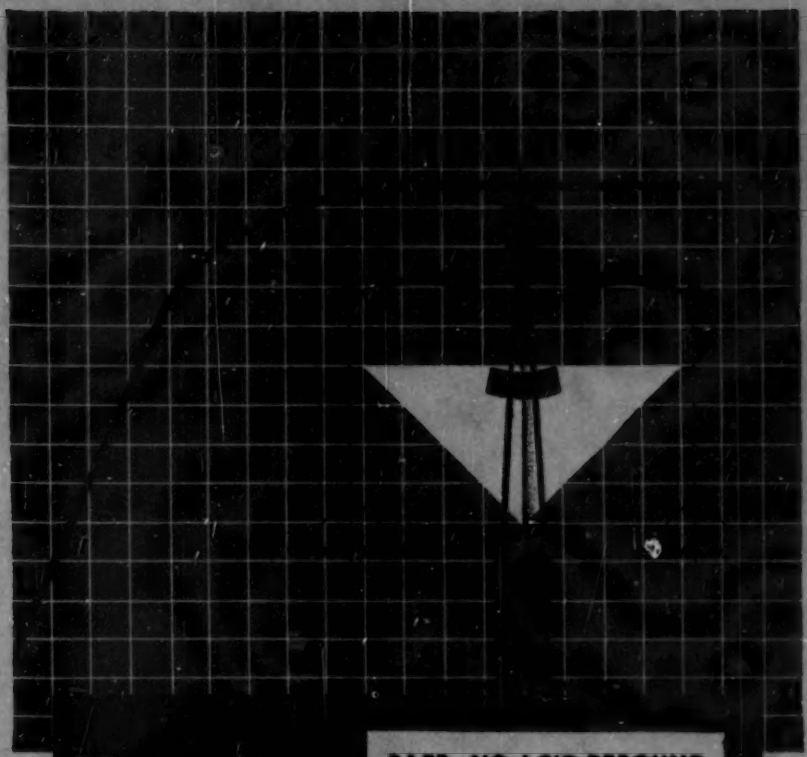

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THE AUTHOR is Arthur W. Ham, M.B., Professor of Anatomy, in Charge of Histology, in the Faculties of Medicine and Dentistry, University of Toronto.

HISTOLOGY, by Ham is the most recent published textbook in the field: published March 1950.

HISTOLOGY contains 738 pages of text material and 445 Figure Numbers (virtually all of the illustrations have been prepared especially for this book), its format is 7¼" x 10¼". The type used in Histology has been thoughfully designed to accommodate the mechanism of the eye; the space suited to eye span promotes rapid reading with least eye strain.

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